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**Compilers Guide for the Manual on Statistics of International
Trade in Services 2010 – *Unedited Draft Version***

Prepared by the UN Expert Group on the Compilers Guide for the Manual on Statistics of
International Trade in Services 2010

Compilers Guide for the Manual on Statistics of International Trade in Services 2010

UNEDITED DRAFT VERSION

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Foreword

The United Nations Statistical Commission requested¹ in 2010 at its 41st session to give high importance to the development of compilation guidance for Statistics of International Trade in Services (SITS). Supported by the UN Expert Group on the compilation of SITS and the Task Force on SITS, the actual work on the Compilers Guide for the *Manual on Statistics of International Trade in Services 2010* (MSITS 2010) started late in 2011. The Guide serves the purpose of harmonizing and improving the ways in which statisticians at the national level collect, compile and disseminate SITS.

The overarching aim is to increase the availability and quality of SITS in order to fulfil the urgent needs and demands for such data by policy makers, researchers, market analysts and the public in general. While the international standards in economic statistics² are in the process of being implemented, this Guide comes timely, providing the statistical community with guidelines, best practices, case studies, and practical advice on the compilation of SITS.

The Expert Group consisted of experts from various national agencies of developed and developing countries, as well as members of the Task Force, and was created to ensure active country involvement in the production of the Guide. The experts fulfilled the promise and were very active and supportive in the drafting process through four virtual meetings and one face-to-face meeting.

A fully edited version of the draft Guide was presented to the Task Force at its meeting in October 2013 and was discussed electronically by the Expert Group during November 2013. During the electronic discussion, it was noted that there remained certain areas where the guidance was provisional, which partly reflected the need to fine-tune some sections and provide examples of best practice, depending on the underlying statistical information system. It was also noted that there remained some areas requiring further development of compilation guidance. While some of these unresolved issues are being pursued in other forums (such as the Economic Commission for Europe (ECE) Task Force on Global Production), the complex nature of transactions within global production arrangements has meant that development of guidance by these forums has been delayed. Because of the importance of ensuring harmonized international guidance on implementation, this has necessarily had an impact on the finalization of this Guide. The Expert Group agreed to reflect the outcomes of that work in the Guide, if they would be available in time, or to flag the issues requiring further action if recommendations were not forthcoming soon.

Notwithstanding these issues, at the time of the electronic discussion, it was agreed that there was a strong need for guidance to be made available as soon as possible to assist in the implementation of MSITS 2010. Acknowledging this urgent need for guidance, the Group further agreed that the draft version of the Guide was to be submitted to the Statistical Commission at its forty-fifth session in 2014 and made available to compilers for use now, as a draft electronic document that would be finalized in a reasonable time frame after March 2014.

Therefore, this document is a draft version of the Compilers Guide for MSITS 2010 and will be replaced by the official version in the course of 2014.

¹ See Decision 41/104 of the 2010 Commission Report, E/CN.3/2010/34.

² *System of National Accounts 2008*, United Nations et al., 2009, and *Balance of Payments and International Investment Position Manual, Sixth Edition*, Washington, D.C.: International Monetary Fund, 2009

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Introduction

1. Rapid technological advances in the past few decades in transport, computing, and telecommunications, including the development of the internet and electronic commerce, have allowed enterprises to avail themselves of resources for production at more distant locations than ever before and have enabled them to import or export services from ever wider markets. This trend towards globalization, reinforced by liberalization policies and the removal of regulatory obstacles to economic activities, has fuelled the steady growth of multinational enterprises, international investment and trade in goods and services. Better communication and transport have also facilitated the movement of people for the purposes of tourism, migration, employment and trade. The result has been a growing economic interdependency among countries, be it through international trade, multi-national enterprises, global value chains or the outsourcing of business functions. Particularly in the field of trade in services, which are increasingly becoming the focus of trade liberalization agreements, market access deregulation, and other policy initiatives, statisticians face a growing challenge to produce statistics that measure these complex global transactions in a clear, accurate, and timely manner.

2. The services sector accounts for the largest share of business activity, employment, and economic growth in most economies, yet the role of services trade, particularly in designing policies and negotiating regional agreements, continues to be poorly understood. A major reason for this disconnect is the absence of abundant, high-quality data on trade in services that is comparable across economies – making it difficult to measure the impact of services trade on the economy and provide useful information for negotiators and policy makers incoming up with market access or policy tools that could facilitate trade in services.

3. In this respect the United Nations Statistical Commission adopted³ in 2010 at its 41st session the *Manual on Statistics of International Trade in Services 2010* (MSITS 2010) and endorsed the implementation plan, while urging the Task Force on Statistics of International Trade in Services (TF-SITS) to give high importance to the development of corresponding compilation guidance. In an effort to coordinate compilation guidance with the International Monetary Fund with regards to balance of payments statistics, the actual work on this Compilers Guide for MSITS 2010 started late in 2011 with the support of a UN Expert Group established for this purpose. The Compilers Guide aims to help the compilers of trade in services statistics, while staying consistent with the recommendations in MSITS 2010 and related statistical recommendations, and staying in line with the compilation guidance, which was being developed for the Balance of Payment and International Investment Position Manual (BPM6).⁴

4. The Compilers Guide of MSITS 2010 serves the purpose of harmonizing and improving the ways in which statisticians at the national level collect, compile and disseminate statistics of international trade in services (SITS). The aim is to increase the availability and quality of such statistics in order to fulfil the urgent needs and demands for SITS data by policy makers, researchers, market analysts and the public in general. While the international standard in economic statistics of the 2008 System of National Accounts (SNA 2008)⁵ and the BPM6 are in the process of being implemented, this Compilers Guide

³ See Decision 41/104 of the 2010 Commission Report, E/CN.3/2010/34.

⁴ *Balance of Payments and International Investment Position Manual, Sixth Edition*, Washington, D.C.: International Monetary Fund, 2009.

⁵ *System of National Accounts 2008*, United Nations et al., 2009.

comes timely providing the statistical community with guidelines, best practices, case studies, and practical advice on the compilation of SITS.

A. Background

A.1. The GATS: an overview

5. In 1994 the Uruguay round of trade negotiations was completed by signing the Agreement establishing the World Trade Organization (WTO). Annex 1B to the Agreement contains General Agreement on Trade in Services known as the GATS⁶. The GATS established a set of rules and disciplines governing the use by the WTO members of measures affecting trade in services. The trade in services was defined in Article I of the GATS as “the supply of a service”. The same article defined also four different ways in which a service can be supplied by a natural and juridical person (service supplier) from the territory one of the WTO members to a service consumer in the territory of another WTO member. Article XXVIII provided the elaboration of the meaning of the main of GATS concepts for use in international negotiations⁷ on liberalizing trade in services and related analytical work.

6. The term “service” is not defined in the Agreement. However, the scope of services with which the GATS is concerned was clarified by the GATT Secretariat in the document MTN.GNS/W/120 entitled “Services Sectoral Classification List” (W/120). The list was based on the consultations with the WTO Members and issued in 1991. W/120 identifies relevant sectors and subsectors and enabled members to undertake specific commitments. It should be noted that the WTO Members have tended to avoid any major changes in the list to ensure the stability and comparability of commitments over time, even though related international statistical classifications have been revised (see Chapter 1, Section B for details).

7. The GATS created a need in specific data leading eventually to establishing of a special statistical domain – statistics of international trade in services (SITS). In view of a fundamental importance of the GATS conceptual framework for SITS its key elements are described in Chapter 1 (Section B) of this Guide.

A.2. GATS related data needs

8. The GATS negotiators and trade in services policy makers as well as business community, research institutions and public at large need detailed and internationally comparable statistical information on the supply of services by mode, type of service and trading partner. The policy makers require such data to ensure an informed decision making process leading to specific commitments, comparison of national commitments and a conduct of efficient negotiations as well as to assess the extent of liberalisation reached in specific sectors/markets and to provide statistical background for the settlement of disputes.

9. The availability of timely data and comparable statistics on international trade in services would greatly benefit business community as such data would significantly facilitate

⁶ Available at http://www.wto.org/english/docs_e/legal_e/26-gats_01_e.htm.

⁷ The regional economic integration agreements take their inspiration from the GATS definitions. However, some of these agreements may define the modes in a somewhat different way. The compilers should be aware of this while interpreting data on value of the services supplied under different modes in a regional context.

the evaluation of the importance of each type of internationally trade service and understanding of how those services are provided in the respective economies thus helping to realize the competitive advantages in a globalized world. The research institutions and public at large are interested in obtaining timely and accurate information on international trade in services to assess its role in economic and social developments both in their respective countries and globally and to participate more effectively in the formulation of their countries' trade policies.

10. The conceptual and practical issues related to the compilation of data on value of internationally supplied services occupy the most of the Guide. However, it is necessary to stress that statistical needs related to the GATS go beyond the value of services as various non-monetary indicators of modes of supply are critically important for assessing their economic and social impact. Chapter 16 of the Guide is specifically focused on the conceptual and data compilation issues related to the compilation of such indicators.

A.3. *MSITS as a statistical response to the GATS related data needs*

11. The GATS has highlighted that the scope of supply of services which is of a primary interest to trade negotiators and trade policy makers is far broader than what statistics conventionally measure (e.g., supply of services by commercial presence) thus making the statistical community aware of an informational gap which had to be filled. Dealing with this issue was a serious challenge as the GATS conceptual framework differs from statistical frameworks adopted internationally for economic statistics. To meet this challenge successfully it was necessary to conceptualize the supply of services by modes in a statistical context.

12. In response to this challenge the UN Interagency Task Force on Statistics of International Trade in Services drafted *Manual on Statistics of International Trade in Services* (MSITS) and the United Nations Statistical Commission (UNSC) adopted it at its thirty-second session in March 2001. The Manual established the statistical framework based on which measurement of supply of services was made possible. The Manual was revised by the Task Force less than a decade after its adoption to take into account publication of the revised international statistical standards including BPM6, SNA 2008, CPC version 2, ISIC Rev.4, IMTS 2010, IRTS 2008 and others as well as the necessity of further elaboration of the modes of supply measurement. The revised version of the Manual was adopted by the UNSC in 2010 and is known as MSITS 2010. MSITS 2010 provides a clearer, more detailed and more comprehensive statistical framework of SITS. Once implemented, the MSITS 2010 recommendations and guidelines will result in data, which will enable a more pertinent statistical and economic analysis of international supply of services and evidence-based decision making.

13. The MSITS 2010 statistical framework was developed utilizing two main building blocks: (i) BPM6 concepts and definitions describing transactions between residents and non-residents of different economies and (ii) concepts and definitions developed in Foreign Affiliates Statistics (FATS) on the basis of BPM6 and the OECD 4th edition of the *Benchmark Definition of Foreign Direct Investment*. The use of these two building blocks was necessitated by the following consideration. Interpreting supply of services between natural and juridical persons located in the territories of different WTO members in terms of the services transactions between residents and non-residents of different economies made

possible not only estimation of value of supply of services by all modes except for commercial presence, but also to provide details of such supply by service categories and trading partners. However, since the BPM6 conceptual framework cannot cover supply of services through commercial presence of service suppliers in the economy of service consumers a new statistical framework for measuring the supply of services through that mode had to be established. Such a framework was developed as part of foreign affiliates statistics. It should be underlined that that framework, once implemented, will not only generate information needed for the GATS related purposes, but also will result in statistics indispensable for a better understanding the overall dynamics of the global economy and for assessing of its impact on individual countries. Chapter 1 contains an overview of the main elements of these two components of MSITS 2010 conceptual framework while the rest of the Guide deals with various data collection data compilation and data dissemination issues.

14. While stressing the importance of the MSITS 2010 conceptual framework it should not be overlooked that MSITS recommendations and guidelines on the compilation of statistics by modes of supply are laid out only for statistical purposes. They do not imply any attempt to interpret the GATS.⁸ In this connection MSITS 2010 recognizes that a comprehensive statistical treatment of modes of supply that would fully mirror the GATS legal definition and other GATS articles is beyond its scope⁹. The same limitation applies to the present Guide.

A.4. MSITS 2010 and the Compilers Guide for MSITS 2010

15. Although the original version of the Manual was released in 2002, the international statistical community did not produce compilation guidance to accompany its recommendations. However, with the adoption of the 2010 edition of the Manual the UNSC specifically requested that the Task Force develop appropriate compilation guidance. This is the reason why UNSD, with the assistance of the Task Force, established in December 2011 an Expert Group on compilation of trade in services statistics (EG-CSITS) to assist in the preparation of the Compiler's Guide for MSITS 2010. The expert group included all members of the interagency Task Force, as well as compilers from developing and developed economies, and is convened by UNSD. The guide represents the result of the work of both Task Force and the Expert Group.

16. EG-CSITS was established to ensure active country involvement in the development of the compilers guide. In March 2012, the first meeting of EG-CSITS was held through virtual discussion. The main objective of the meeting was to review the annotated outlines of all chapters of the compilers guide and to define the scope of the guide and the content of each of the chapters. A revised annotated outline was thereafter circulated for worldwide consultation in July 2012 and first draft chapters were prepared as well. The outcome of the worldwide consultation and the draft chapters were being discussed in a virtual meeting in October 2012. Further draft chapters were discussed at a third virtual meeting in March 2013. In all three meetings about 65 representatives of countries and international organizations actively participated. At the end of June 2013, the expert group came together for a face to face meeting in Geneva to discuss the first full draft of the compilers guide. At that time the document was bulky composed of many different contributions, but did not have coherence

⁸ MSITS 2010, paragraph 5.32.

⁹ Ibid., paragraph 5.27.

or consistently yet, which was being worked on in the months following the June 2013 meeting.

B. Purposes and scope of the Guide

17. The main purpose of the Guide is to assist countries in the production of high quality official statistics on international trade in services in compliance with MSITS 2010. The Guide strives to achieve this by (i) clarification and elaboration of a number of more difficult conceptual issues and (ii) identification of good practices in the implementation of MSITS 2010¹⁰. Further, this Guide is intended to better integrate the SITS compilation in the context of a global statistical work and, therefore, recognizes importance of not only such pillars as BPM6 and SNA2008, but also of the UNSC recommendations for other related statistical domains as well as its guidance contained in *Guidelines on Integrated Economic Statistics*¹¹ and *National quality assurance framework*.¹²

18. In particular, the Guide aims to complement the BPM6 compilation guidance on balance of payments statistics, focusing on the compilation of data by EBOPS 2010 categories, trading partner and mode of supply. Also, it includes more detailed compilation guidelines for FATS as far as it relates to the international supply of services, and provides guidance on how to compile statistics on the modes of supply on the basis of a new analytical framework laid down in Chapter V of MSITS 2010. It is expected that an increasing number of countries will begin compiling services data by modes of supply following the good practices provided in the Guide. Further, the Guide recognizes the importance of data quality, metadata and the use of IT tools in the production process of SITS and contains guidance and advice relevant to those areas of statistical work. In addition, the Guide is intended to promote SITS by making available to users a comprehensive source of information on its methodological foundations and on data compilation practices. This will enable users to understand better the nature of SITS and, consequently, to interpret and use SITS correctly and more effectively.

19. As it is not possible to present a single best practice applicable in all cases the Guide outlines various options that may be suitable depending on a country circumstances and resources. For countries that have well-developed compilation systems, the Guide contains criteria against which these compilation systems may be compared and evaluated. For countries that may need to improve parts of their compilation systems, the Guide presents examples of good practices and related country experiences. For countries that do not have well-developed systems, the Guide contains advice on good practices that can be used as a starting point to develop appropriate data collection and data compilation procedures. It should be noted that the identification of good practices described in the Guide benefited from the input of national compilers which have gone through the process of implementing the recommendations contained in MSITS 2010. The Guide focuses on the main features of the relevant international recommendations and good practices, while some more technical and country specific details are available on the dedicated UNSD website.

¹⁰ It should be noted that clarification of the conceptual issues implies (i) explanation of the terms used in the definitions of particular concepts and (ii) operationalization of the definitions by relating them to the statistical procedures which might be used to obtain anticipated data. The term “good practice” is to be understood as a set of activities contributing to the implementation of recommendations contained in MSITS 2010 and resulting in production and dissemination of high quality SITS.

¹¹ Available at: <http://unstats.un.org/unsd/nationalaccount/ies/GuidelinesIES.pdf>.

¹² Available at: <http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx>.

20. Scope of the Guide was determined by the tasks which the SITS compiler typically has to deal with. These tasks range from the operationalisation of the SITS conceptual framework and defining the set of variables to be compiled to the setting in place effective institutional arrangements, identification of appropriated data sources, data collection and data compilation procedures, and to the organization of efficient quality assurance and data dissemination programmes. The Guide elaborates challenges and good practices in the above areas of work, provides numerous country experiences and provides guidance on how those practices can be applied under different country circumstances.

C. Organization of the Guide

21. The organization of the Guide largely follows the logic of the statistical process beginning with an overview of SITS general frameworks followed by the description of data collection and data compilation issues and good practices, data and metadata dissemination and concluding with the elaboration of several key cross-cutting topics in the SITS context.

22. Part I of the Guide provides an overview of general frameworks, namely conceptual frameworks (Chapter 1), legal frameworks (Chapter 2) and institutional arrangements (Chapter 3), which underpin the SITS production.

23. Part II focuses on data collection and starts off with an introduction and overview of data sources within the modes of supply framework (Chapter 4), which is followed by elaboration of registers and survey frames (Chapter 5), enterprise and establishment surveys (Chapter 6), surveys of persons and households (Chapter 7), international transaction reporting system (Chapter 8), administrative records (Chapter 9) and other data sources (Chapter 10). Part II is concluded by comparing data sources (Chapter 11).

24. Part III elaborates various issues of data compilation. It begins with an introduction and overview of data compilation within the modes of supply framework (Chapter 12) and elaboration of challenges and good practices in the integration of data from different sources (Chapter 13). Specific issues and good practices relevant to the compilation of main components of SITS are elaborated in the subsequent chapters as follows: resident/non-resident trade in services statistics (Chapter 14), compilation of FATS and the international supply of services (Chapter 15), compilation of other indicators for modes of supply (Chapter 16). Guidance on estimation and modeling of missing data, forecasting or back-casting is contained in the concluding Chapter 17.

25. Part IV focuses on cross-cutting topics and consists of four chapters which provide guidance on metadata (Chapter 18), quality management (Chapter 19), data and metadata dissemination (Chapter 20), and on use of information and communication technology (Chapter 21).

26. The Guide has a number of Annexes which will be provided in the final version.

Part I General Frameworks

Scope. Part I of the Guide is intended to provide for the rest of the Guide an overview of the conceptual frameworks of SITS (see Chapter 1), the legal framework (Chapter 2) and of the institutional arrangements relevant for SITS, so that Part II and Part III can be focused on data collection and data compilation respectively while Part IV will deal with the cross-cutting topics.

Chapter 1 Conceptual frameworks

1.1. *Scope.* Chapter 1 is intended as a conceptual map to the rest of the Guide and is focused on the scope of SITS, main components of SITS conceptual framework and boundary. It defines all basic concepts and highlights the relationships between various conceptual frameworks on the basis of which particular parts of SITS are compiled. The concepts and their definitions contained in this Chapter are taken verbatim from MSITS 2010 or from other source documents such as BPM6, SNA2008, IRTS 2008 and others. The subsequent chapters of the Guide elaborate basic concepts provided in this chapter. The Chapter consists of the following sections: The GATS modes of services supply conceptual framework (Section A), Conceptual framework of statistics on resident/non-resident transactions in services (Section B), Foreign affiliates statistics: basic concepts and definitions (Section C) and Statistical framework for mode 4 (Section D).

A. The GATS modes of services supply conceptual framework

1.2. This section contains an overview of the GATS modes of services supply conceptual framework. The GATS concepts and definitions have a special significance for understanding the content of the MSITS 2010 statistical framework and the way data collection and data compilation are organized now and should evolve in the future.

A.1. The GATS basic concepts

1.3. The main elements of the GATS conceptual framework are provided in Articles I and XXVIII of the Agreement and are reproduced in Box 1.1. The compiler should fully understand the meaning of these concepts as they are frequently referred to while discussing the relevance and limitations of the statistical frameworks developed to address needs of the GATS negotiators as well as trade policy analysts and other users.

1.4. It should be noted that while the GATS does not define the term “service” it specifically excludes from services covered under the GATS (see points 3(b) and 3(c) of Article I) services supplied in the exercise of governmental authority, that is any service which is supplied neither on a commercial basis nor in competition with one or more service suppliers.

Box 1.1

GATS Article I: Scope and Definition

1. For the purposes of this Agreement, trade in services is defined as the supply of a service:
 - (a) from the territory of one Member into the territory of any other Member;
 - (b) in the territory of one Member to the service consumer of any other Member;
 - (c) by a service supplier of one Member, through commercial presence in the territory of any other Member;
 - (d) by a service supplier of one Member, through presence of natural persons of a Member in the territory of any other Member.
2. For the purposes of this Agreement:
 - (a) "services" includes any service in any sector except services supplied in the exercise of governmental authority;
 - (b) "a service supplied in the exercise of governmental authority" means any service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers.

1.5. The scope of services covered by the GATS was clarified, however, by the GATS Secretariat in 1991 in the document No. MTN.GNS/W/120, entitled "Services Sectoral Classification List" (W/120) which was prepared in consultations with members in advance of the GATS official adoption¹³. The list identifies relevant sectors and subsectors in terms of the first version of the Central Product Classification (CPC), so as to enable members to undertake specific commitments. However, this classification is not mandatory and services trade negotiators may also use other classifications in negotiations, as has been the case for basic telecommunications, financial services and maritime transport. It should be noted that the WTO members have tended to avoid any major changes in this list so as to ensure the stability and comparability of commitments over time, even though the CPC was revised several times¹⁴.

1.6. Following the GATS, MSITS 2002 introduced (and MSITS 2010 retained) the following terminology to refer to different modes of supply which depend on the territorial presence of the supplier and the consumer at the time of the transaction:

- i. Mode 1 (cross-border trade): the supply of services from the territory of one Member into the territory of any other Member;
- ii. Mode 2 (consumption abroad): the supply of services in the territory of one Member to the service consumer of any other Member;
- iii. Mode 3 (commercial presence): the supply of services by a service supplier of one Member, through commercial presence, in the territory of any other Member; and

¹³ WTO, MTN.GNS/W/120 10 July 1991, SERVICES SECTORAL CLASSIFICATION LIST.

¹⁴ The most current version of this classification – CPC, Version 2 was adopted in 2008 and is available at the UNSD website: <http://unstats.un.org/unsd/cr/registry/cpc-2.asp>.

iv. Mode 4 (presence of natural persons): the supply of services by a service supplier of one Member, through the presence of natural persons of a Member in the territory of any other Member.

1.7. *Supply of a service* is defined as including the production, distribution, marketing, sale and delivery of a service. *Service supplier* means any person that supplies a service while a *service consumer* means any person that receives or uses a service. The term “person” means either a natural person or a juridical person.

1.8. *Commercial presence* means any type of business or professional establishment, including through (i) the constitution, acquisition or maintenance of a juridical person, or (ii) the creation or maintenance of a branch or a representative office, within the territory of a Member for the purpose of supplying a service.

1.9. The compiler should be aware that the essential features of the GATS conceptual framework are:

i. Modes of supply are essentially defined on the basis of the location of the service supplier and the consumer, the nationality of the supplier and the way in which the service is provided.

ii. The concept of *modes of supplying services* goes beyond the scope of international trade in services statistics as measured in the BoP statistics, in particular with respect to mode 3 (commercial presence) and requires additional conceptual framework (FATS).

A.2. *The GATS modes of supply in statistical context*

1.10. As follows from the above definitions the GATS conceptual framework differs from statistical frameworks adopted internationally for economic statistics. In order to provide a basis for compilation of data relevant to the needs of GATS negotiators and related policy analysis a conceptualization of the supply of services by modes in a statistical context was needed¹⁵. Such conceptualization was provided in MSITS 2002 and further developed in its revised version - MSITS 2010.

1.11. The most suitable statistical framework available at the end of the 1990s to serve this purpose was the balance of payments (BOP) methodology of measuring services transactions between residents and non-residents of different economies. By interpreting supply of services between natural and juridical persons located in the territories of different WTO members in terms of services transactions between residents and non-residents of different economies it became possible not only to generate estimates of supply of services by modes 1, 2 and 4, but also to provide details of such supply by service categories thus laying the foundation for the new statistical domain – statistics of international trade in services (SITS). The key elements of the BOP conceptual framework relevant to SITS are described in section B of this chapter while details on good practices in data collection and compilation based on this framework are contained in chapter 14. Details on the approaches to the collection and compilation of resident/non-resident services transactions data to particular modes of supply are contained in chapter 14 section C.

¹⁵ MSITS 2010, paragraph 5.9.

1.12. However, the BOP conceptual framework could not cover supply of services through commercial presence (mode 3) in a satisfactory way. Therefore, MSITS 2010 has developed a new statistical framework - Foreign Affiliates Statistics (FATS)¹⁶. FATS and complementary FDI statistics not only provided additional information needed for GATS-related purposes, but it also help to better understand the degree to which globalization of services supply is taking place. Section C contains an outline of this framework while chapter 15 describes FATS compilation. Compilation of data on the movements of natural persons in the context of modes 2 and 4 requires additional statistical conceptualization (see Section D) as well as the identification of good compilation practices (see Chapter 16).

B. Conceptual framework of statistics on resident/non-resident transactions in services

1.13. *Definition of services.* BPM6 defines services as the result of a production activity that changes the conditions of the consuming units, or facilitates the exchange of products or financial assets. Services are not generally separate items over which ownership rights can be established and cannot generally be separated from their production.¹⁷

1.14. The first main building block of the SITS statistical framework is provided by the BPM6 concepts and definitions covering transactions between residents and non-resident institutional units. Statistics compiled on the basis of these concepts and definitions provides a wealth of information which can be used to approximate the value of services supplied by modes 1, 2 and 4. This section contains an overview of the most important concepts of this part of MSITS 2010 framework including those used for the trading partner attribution.

B.1. Basic concepts: an institutional unit and its residence

1.15. As described in section B the GATS is concerned with juridical and natural persons and their nationality. These concepts as such are not part of economic statistics including balance of payments statistics. The best possible statistical proxies of these concepts identified in MSITS 2010 are an institutional unit and residence. Despite this conceptual difference it is generally agreed that international trade in services statistics compiled on the basis of BPM6 together with foreign affiliates statistics (see sections C and D) provide a relatively good approximation of the supply of services as defined by the GATS.

1.16. *An institutional unit* is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities (SNA2008, Chapter 4). The main attributes of an institutional unit are:

- i. It is entitled to own assets in its own right; it is, therefore, able to exchange the ownership of goods or assets through transactions with other institutional units;
- ii. It is able to make economic decisions and engage in economic activities for which it is itself held to be directly responsible and accountable by law;

¹⁶ See MSITS 2010, Chapter IV.

¹⁷ BPM6, Chapter 10, paragraph 10.8.

iii. It is able to incur liabilities on its own behalf, to take on other obligations or future commitments and to enter into contracts; and

iv. Either a complete set of accounts, including a balance sheet, exists for the unit, or it would be possible and meaningful, from an economic viewpoint, to compile a complete set of accounts if it were to be required.

1.17. *The residence of an institutional unit* is the economic territory with which it has the strongest connection, constituting its centre of predominant economic interest (see BPM6, chapter 4, entitled “Economic territory, units, institutional sectors, and residence”, and the 2008 SNA, chapter 4, entitled “Institutional units and sectors”, for a full discussion of institutional units and sectors). Each institutional unit is a resident of one and only one economic territory, as determined by its centre of predominant economic interest.

1.18. Economic statistics, and in particular the balance of payments, provide a number of guidelines to define residence. The ones most relevant to this Guide are as follows:

i. Actual or intended location for one year or more is used as an operational criterion for defining residence in an economic territory. While the choice of one year as a specific period is somewhat arbitrary, it is adopted to eliminate uncertainty and facilitate international consistency;

ii. Residence of households is in the economic territory in which its members maintain or intend to maintain a dwelling or succession of dwellings, treated and used or to be treated and used by members of the household as their principal dwelling;

iii. Residence of individuals who belong to the same household must be residents of the same territory. If a member of an existing household ceases to reside in the territory where his or her household is resident, the individual ceases to be a member of that household. As a result of this definition, the use of households as the institutional unit is compatible with residence being determined on an individual basis (see BPM6 Chapter 4 on the residence of particular categories of individuals such as students, medical patients, ship’s crew, as well as national diplomats, military personnel, staff of scientific stations, and other civil servants employed abroad in government enclaves);

iv. As a general principle, an enterprise is resident in an economic territory when the enterprise is engaged in significant production of goods and/or services at a location in that territory. An enterprise may have a location that is used as a base from which it delivers services to other locations. Unless the activities at the point of delivery are substantial enough to amount to the operation of a branch, the residence of the enterprise is established by determining its base of operations (for more information see MSITS 2010, paragraphs 3.4-3.26).

1.19. The operationalisation of the concept of residency in the context of various surveys relevant to SITS is discussed in Part II of the Guide.

B.2. *Services: components*

1.20. *Service components.* The scope of international trade in services in the conventional balance of payments sense of transactions between residents and non-residents is determined by the scope of the major service components of BPM6, which are as follows:

- i. Manufacturing services on physical inputs owned by others.
- ii. Maintenance and repair services n.i.e.
- iii. Transport.
- iv. Travel.
- v. Construction.
- vi. Insurance and pension services.
- vii. Financial services.
- viii. Charges for the use of intellectual property n.i.e.
- ix. Telecommunications, computer and information services.
- x. Other business services.
- xi. Personal, cultural and recreational services.
- xii. Government goods and services n.i.e.

1.21. The BPM6 service categories are detailed the Extended Balance of Payments Services Classification provided in MSITS 2010 (EBOPS 2010). EBOPS 2010 is completely consistent with BPM6 but provides for more detailed breakdowns in a number of areas. A correspondence between EBOPS 2010 and BPM6 is presented in Annex [...]. The good country practices in data collection and data compilation of particular EBOPS categories are described in Chapters 6 and 14.

1.22. The BPM6 and EBOPS classification of services are primarily product-based, and in many cases may be described in terms of the international classification of products, as contained in CPC, version 2. A correspondence between EPOPS 2010 and CPC, version 2, is presented in online Annex A-2.¹⁸

B.3. *Valuation*

1.23. *BPM6 and MSITS 2010 recommendation.* Compiling the international trade in services statistics requires a uniform system of valuation to ensure inter-temporal and international consistency. The recommendation provided in MSITS2010 (following the recommendations of BPM6 and SNA2008) is that market price should be used as the basis of valuation for services transactions. MSITS 2010 in accordance with BPM6 further recommends that recording of resident/non-resident transactions should be done on a gross basis (full value).

1.24. *Market prices* for transactions are defined as amounts of money that willing buyers pay to acquire something from willing sellers. The exchanges are made between independent parties and based on commercial considerations only and are sometimes called “at arm’s length” transactions. These transactions will generally be valued at the actual price agreed between the supplier and the consumer. Thus, according to this strict definition, a market price refers only to the price for one specific exchange under the

¹⁸ MSITS 2010 online annex. <http://unstats.un.org/unsd/tradeserv/TFSITS/msits2010/ebops2cpc.htm>.

stated conditions. A second exchange of an identical unit, even under circumstances that are almost exactly the same, could result in a different market price.

1.25. The compiler should be aware that a market price should not necessarily be construed as equivalent to a free market price¹⁹; i.e., a market transaction should not be interpreted as occurring exclusively in a purely competitive market situation. In fact, market transactions in some services could take place in a monopolistic, monopsonistic, or any other market structure. Indeed, the market may be so narrow that it consists of the sole transaction of its kind between independent parties.

1.26. *Valuation on a gross basis.* Aggregations or combination of items in which all elementary items are shown for their full values are also referred as gross recordings. In contrast, aggregations of combinations for which the value of some elementary items are offset against the same items that have an opposite sign are called net recording.²⁰

1.27. The compilers should note that net recording²¹ tends to reduce the usefulness of the statistics and is not a good practice in the context of SITS compilation. In connection with the data collection method, netting contracts can make the settlements amounts smaller than transaction amounts. Ideally, data reporting should be made based on the data on a gross basis, i.e., before netting.

1.28. *Valuation of transactions in which several currencies were used.* Transactions may take place in a range of currencies, including the domestic currency of either the provider or the consumer of the services. To produce meaningful statistics, however, it is necessary for the compiler to convert all transaction values to a common unit of account. Most often, the common unit will be the national currency of the service provider, which facilitates the use of such statistics in conjunction with other economic statistics relating to the domestic economy. However, if this currency is subject to significant depreciation relative to other currencies involved in the international transactions of the economy, a misleading picture of growth in money terms may result. A similar effect may be observed if a country is experiencing currency value inflation. In both cases, it may be more useful for purposes of analysis to express all transactions in another, more stable currency.

1.29. In principle, the most appropriate exchange rate to be used in converting transaction values from the currency of transaction to the currency of compilation is the market rate prevailing at the time that the transaction takes place. The use of a daily average exchange rate for daily transactions provides a very good approximation. If daily rates cannot be applied, average rates for the shortest period should be used. When compiling FISIM, some transactions, such as those entailing the accrual of interest, occur on a continuous basis over a period of time. For such flows, therefore, an average exchange rate for the period in which the flows occur should be used for currency conversion. The midpoint between buying and selling rates at the time of the transaction should be used so that any service charge (the spread between the midpoint and those rates) is excluded. This service charge is included as part of financial services.²² However, because the actual midpoint rate at the time at which the transaction occurs may not be

¹⁹ BPM6, paragraph 3.68.

²⁰ Ibid., paragraph 3.112.

²¹ Ibid., paragraph 2.19.

²² MSITS 2010, paragraph 3.202.

available to the compiler, an accepted practice is to take the average midpoint rate for the period for which the data are being compiled.

1.30. *Valuation when it may not be possible to establish a market price.* BPM6 identifies some of the more common circumstances under which it may not be possible to establish a market price and recommends that in such circumstances, the development of a proxy measure by analogy with known market prices, established under conditions that are considered essentially the same as those pertaining to the un-priced or mispriced transaction.

1.31. When market prices for transactions are not observable, valuation according to market-equivalent prices provides approximation to market prices. In such cases, market prices of the same or similar items when such prices exist will provide a good basis for applying the principle of market prices. Generally, market prices should be taken from the markets in which the same or similar items are traded currently in sufficient numbers and in similar circumstances. If there is no appropriate market in which a particular good or service is currently traded, the valuation of a transaction involving that good or service may be derived from the market prices of similar goods and services by making adjustments for quality and other differences²³.

1.32. Barter transactions reflect the provision of services without a charge. If a buyer and a seller engage in a barter transaction—the exchange of services for other goods, services, or assets (of equal value)—the services bartered should be valued at the prices that would have been received if they had been sold in the market²⁴.

1.33. In some cases, the reported prices of services may not represent market prices. Examples are transactions involving pricing between affiliated enterprises or manipulative agreements with third parties. Prices may be under- or over-invoiced (i.e., shown at a price other than the actual price, for instance, to evade taxes or exchange controls), in which case, an assessment of a market-equivalent value needs to be made. An adjustment should be made when actual exchange values do not represent market prices of services rendered, but this may not be practical in many cases. Adjusting the actual exchange values to reflect market prices will have consequences in other accounts. Therefore, when such adjustments are made, corresponding adjustments in other accounts also should be made as necessary²⁵.

1.34. *Bundling of services or bundling of goods and services.*

[Additional text is to be inserted here.]

1.35. *IPPs and relation to services.*

[Additional text is to be inserted here.]

B.4. Time of recording

²³ BPM6, paragraph 3.71.

²⁴ Ibid., paragraph 3.72.

²⁵ Ibid., paragraph 3.76.

1.36. Time of recording is the period (i.e., month, quarter, year) in which the service transaction should be recorded. The difficulty is that a typical service transaction consists of a series of actions. For example, a party may engage in a set of actions and transactions by entering into a formal agreement to provide services, by acquiring a claim for payments, and by receiving settlement on that claim. All of the actions that make up a transaction are significant from an economic standpoint, and some can be assigned specific dates (date of contract or commitment, for example). In addition, an action—such as entering into a contract—may establish parameters for subsequent transactions—such as settlement by payment or other considerations.

1.37. The compilers should take note that:

i. Following the general BPM6 principles MSITS 2010 recommends that the time of recording of service transaction should be the time when services are delivered or received;²⁶

ii. Recording should be on an accrual basis in each accounting period, that is, services should be recorded as they are rendered. Payment may be made up front, at the end, or as progress payments. To the extent that the time of payment differs from the time of delivery, there may be trade advances (financial assets/liabilities that are extinguished as the service is provided) or trade credit (financial assets/liabilities that arise as the service is provided);

iii. Even if services are supplied over several accounting periods or on a continuous basis (e.g., construction services, operating leasing, insurance services etc.) and there are advance payments or settlements at later dates for such services, they should be recorded on an accrual basis in each accounting period (that is services should be recorded as they are rendered, not when payments are made);

iv. While choosing source data, it is a good practice to consider the advantage of using data for which the correct timing is already recorded. Even sources chosen by compilers as generally the most suitable may not have been specifically designed for the compilation of trade in services statistics. In such a case, compilers are advised to make necessary adjustments.

B.5. Partner country

1.38. MSITS 2010 recognizes the need for detailing statistics on resident/non-resident trade in services by trading partner as such statistics provide a firm basis for the multilateral and bilateral trade in services negotiations carried out under the GATS and important for a variety of analytical purposes including bilateral comparisons of one economy's data with those of a trading partner ("mirror statistics") and constitute an important tool for investigating and improving data quality. The production of these statistics is one of the core recommendations of MSITS 2010 and this Guide.

1.39. As recommended by MSITS 2010 the trading partner should be determined according to the economy of residence of trading partners.²⁷

²⁶ MSITS 2010, paragraph 3.41.

²⁷ Ibid., paragraph 3.57.

1.40. Increasing globalization is characterized by corporations which organize their production and marketing at a global level, with vertical production processes spanning several countries, leading business enterprises headquartered in one country to establish affiliates in other countries to produce and distribute goods and services. The enterprises maximize production efficiency and minimize their global tax burden. Thus, international trade in services between such parents and their foreign affiliates (see section C for definition) have been rapidly increasing. Therefore, within the framework of international trade in services in the conventional balance of payments sense, identification of trading partners in transactions between parents and foreign affiliates has an important analytical value. This is especially important in the case of service items such as manufacturing services on physical inputs owned by others, research and development, computer services, and charges for the use of intellectual property, which are provided within global production and marketing networks.

1.41. It is recognized, however, that compiling statistics by trading partner is resource-intensive and may be difficult, owing to issues related to disclosure and incompleteness of information (the issues related to the partner attribution are further discussed in the context of data sources Part II and data compilation Part III).

C. Foreign affiliates statistics: basic concepts and definitions

1.42. This section is intended to provide an overview of the key concepts on which FATS is based: foreign direct investment, direct investment relationships and control. Details of FATS collection and compilation will be discussed respectively in Chapter 6 and Chapter 15.

C.1. OECD Benchmark Definition of Foreign Direct Investment

1.43. Foreign direct investment (FDI)²⁸ reflects the establishment of a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor.²⁹ The lasting interest implies the existence of a long-term relationship (although it may be a short-term relationship in some cases) between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise, often demonstrated by direct or indirect ownership of 10% or more of the voting power.³⁰

1.44. *Foreign direct investor* is an entity (an institutional unit) resident in one economy that has acquired, either directly or indirectly, at least 10% of the voting power of a corporation (enterprise), or equivalent for an unincorporated enterprise, resident in another economy. A direct investor could be classified to any sector of the economy and could be any of the following: i) an individual; ii) a group of related individuals; iii) an

²⁸ MSITS 2010 and this Guide adopt the definition of foreign direct investment as provided in the 4th edition of the Benchmark Definition of Foreign Direct Investment (BDM4). Available at: <http://www.oecd.org/fr/daf/inv/statistiquesetanalysesdelinvestissement/fdibenchmarkdefinition.htm>.

²⁹ See BMD4, paragraph 117. Only business enterprises can be both direct investors and direct investment enterprises; governments and non-profit enterprises can be direct investors but not direct investment enterprises.

³⁰ Even if in some cases an ownership of as little as 10% of the voting power may not lead to the exercise of any significant influence while on the other hand, an investor may own less than 10% but have an effective voice in the management, a strict application of this definition is recommended to ensure statistical consistency across countries.

incorporated or unincorporated enterprise; iv) a public or private enterprise; v) a group of related enterprises; vi) a government body; vii) an estate, trust or other societal organisation; or viii) any combination of the above. In the case where two enterprises each own 10% or more of each other's voting power, each is a direct investor in the other.

1.45. *Foreign direct investment enterprise.* Foreign direct investment defines relationships between the direct investor and the direct investment enterprise. A direct investment enterprise is an enterprise resident in one economy and in which an investor resident in another economy owns, either directly or indirectly 10% or more of its voting power if it is incorporated or the equivalent for an unincorporated enterprise. According to BMD4 the basic type of enterprises (affiliates) are:

- i. *a subsidiary* is an enterprise in which the investor has control of more than 50% of the voting power;
- ii. *an associate* is an enterprise in which the investor has control of at least 10% of the voting power and no more than 50%; and
- iii. *fellow enterprises* are enterprises which do not have enough (or any) voting power in each other to constitute FDI influence but have a common parent. BMD4 also defines principles and basis to extend these relationships through indirect ownership and joint ownership.³¹

C.2. *Scope of FATS*

1.46. MSITS 2010 focuses on the foreign-controlled subset of foreign affiliates³² and provides conceptual framework for foreign affiliates statistics (FATS) which is in line with BPM6 and the OECD Benchmark Definition of Foreign Direct Investment. These definitions are used and further elaborated in the Eurostat FATS Recommendations Manual (2012).³³ "Control", as referred to in the Framework for Direct Investment Relationships (FDIR), set out in chapter 3 of BMD4,³⁴ is deemed to exist if there is majority ownership (that is, control of more than 50 per cent) of the voting power at each stage of the chain of ownership. That is a foreign affiliate is in FATS scope when a single investor, or an associated group of investors, owns more than 50 per cent of the voting power on it.

1.47. *Concepts of control or influence.* Control or influence is understood as the ability to determine strategy of an enterprise, to guide its activities and to appoint a majority of directors. Foreign control means that the controlling institutional unit is resident in a different country from the one where the institutional unit over which it has control is resident, i.e., control not only is exercising by institutional unit allocated in the same economic territory, instead control relation between national and foreign entities is an important effect of the globalization and to precise the allocation in this kind of control requires compilers of statistics not just to apply the definition but also to make a supplementary assessment.

³¹ BMD4, box 3.4, page 55.

³² MSITS 2010, paragraph 4.6.

³³ Available at

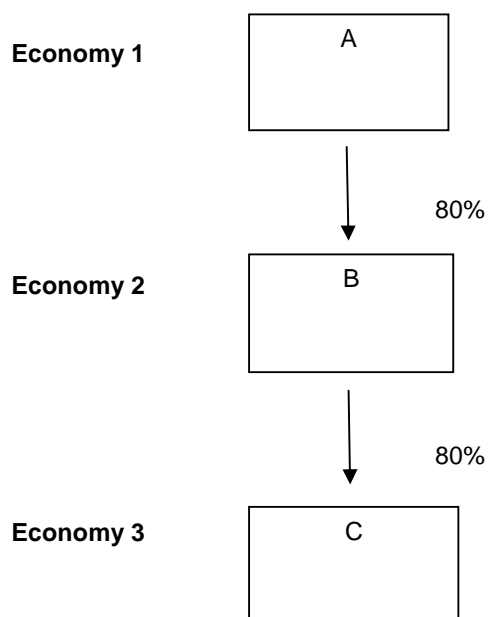
http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-12-016.

³⁴ BMD4, paragraph 135.

1.48. According to BPM6, which keep coherence with the BMD4's criteria, control may be achieved directly by owning equity that gives voting power in the enterprise, or indirectly by having voting power in another enterprise that has voting power in the enterprise (see figure 1.1 for the direct and indirect relationship and the kind of control according these relationships).

- i. Direct control or influence relationships arise when the direct investor directly owns equity that entitles it to 10 per cent or more of the voting power in the direct investment enterprise.
 - a. Control is determined to exist if the direct investor owns more than 50 percent of the voting power in the direct investment enterprise;
 - b. A significant degree of influence is determined to exist if the direct investor owns from 10 to 50 percent of the voting power in the direct investment enterprise.
- ii. Indirect control relationships arise through the ownership of voting power in one direct investment enterprise that owns voting power in another enterprise or enterprises, that is, an entity is able to exercise indirect control or influence through a chain of direct investment relationships

Figure 1.1
Direct and indirect control



1.49. In Figure 1.1, enterprises A, B and C are in different economies. Enterprise A owns 80% of the voting power in enterprise B and is a direct investor in B. Enterprise B, in turn, owns 80% of the voting power in enterprise C and is a direct investor in C. A has control over B, and through its control over B, has indirect control over C.³⁵

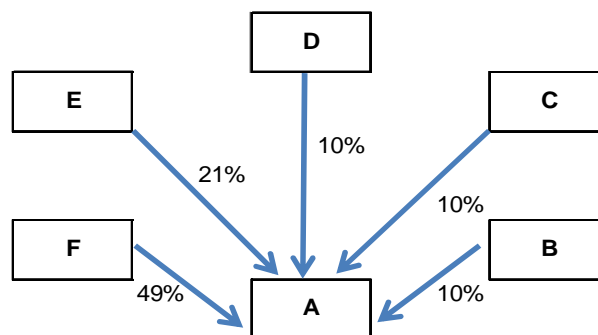
1.50. It is to be noted that control may be exercised in various way as indicated below:

³⁵ See *OECD Benchmark Definition of Foreign Direct Investment*, 4th edition, section 3.4.

- i. Majority control. The acquisition by direct investor of an absolute majority (50 %+1) of shareholdings with voting rights is the main instrument used to take control over direct investment enterprise and, in the absence of other information; it is generally used as a proxy for control. Nevertheless, the absolute majority of ownership of the capital share ownership is not always a necessary or sufficient condition to have control.
- ii. Other forms of control than majority control:
 - a) Situations in which a large relative shareholding with voting rights but without absolute majority is enough to take control: (1) legislation, contracts or agreements affecting control, (2) failure by other shareholders to attend the meeting. This is more a de facto situation and difficult to prove in practice;
 - b) It may not be a sufficient condition because the ability to exercise control effectively depends on the ability to participate actively in the decision-making process. This may be limited by: (1) shareholdings with limited voting rights; (2) statutory provisions that limit the transferability of shares; (3) temporary suspension of voting rights.
- iii. Minority control. Effective minority control means having effective control without holding the majority of voting stock. It does not include indirect control via a majority-controlled subsidiary. The most common case is a minority but large shareholder and a very large number of dispersed small shareholders, none of whom hold a significant share of the capital. The minority shareholder can thus exercise effective control insofar as no majority of shareholders is really able to oppose it. However, it is possible that the small shareholders could join forces in order to have more influence over strategic decisions (see figure 1.2). Effective minority control is, in general, difficult to prove in practice and a shareholding between 10 and 50 per cent is generally regarded as influence, not control.

1.51. Ultimate controlling institutional unit of a foreign affiliate' shall mean the institutional unit, proceeding up a foreign affiliate's chain of control, which is not controlled by another institutional unit.

Figure 1.2
Example of effective minority control



1.52. *Outward and inward FATS.* FATS may be developed for both foreign-controlled affiliates in the compiling economy (inward FATS) and controlled foreign affiliates of the

compiling economy (outward FATS).³⁶ Since under the GATS, countries make commitments with respect to the services that are supplied in their own economies by suppliers of other economies rather than the services they supply abroad, the data most directly related to commercial presence may be those on the activities of foreign-controlled affiliates in the domestic economy (inward FATS). Nonetheless, the reason countries make these commitments is to secure commitments on the part of other countries, with a view to enhancing the ability of their enterprises to supply services in those countries. In terms of commercial presence, this type of services supply is tracked by data on outward FATS, which must therefore be considered relevant as well.

1.53. *Statistical treatment of mode 3 in FATS.* FATS, as recommended in MSITS 2010, differ from the coverage of the GATS in the following ways:³⁷

i. The GATS is concerned with a foreign service supplier which is defined on the basis of majority ownership or control, whereas FATS are compiled for the foreign-controlled subset of foreign affiliates, where control is deemed to exist if there is majority ownership of the voting power at each stage of the chain of ownership). Under the GATS (see article XXVIII, sect. (n)), a juridical person (such as a business enterprise) is “controlled” by persons of a Member if such persons have the power to name a majority of its directors or otherwise to legally direct its actions. Therefore, the GATS is concerned with cases of control as defined by the FDIR, as well as with other cases in which control can be demonstrated to have been achieved.³⁸

ii. The GATS covers the services (products) and the suppliers of those services, whereas, FATS are generally based on activities of affiliates.

3. *An overview of FATS variables*

1.54. MSITS 2010 recommends that the FATS variables to be collected include at least the following basic measures of foreign affiliate activity:

- i. Sales (or turnover) and/or output
- ii. Employment
- iii. Value added
- iv. Exports and imports of goods and services
- v. Number of enterprises

1.55. MSITS 2010 recommends, as an initial priority, that FATS be compiled on an activity basis, because this is the required basis for the compilation of some variables, as well as the basis on which, in all probability, data are currently most widely available. However, as compilation of data on a product basis is recognized as a longer-term goal, compilers are encouraged to work towards providing product detail for those variables that lend themselves to this basis of attribution (namely, sales (turnover) and/or output, exports and imports). If this level of specificity cannot be achieved, compilers may wish to disaggregate sales in each industry between sales of goods and sales of services, as a first step towards achieving a product basis.

³⁶ MSITS 2010, paragraph 4.17.

³⁷ *Ibid.*, paragraph 5.63.

³⁸ *Ibid.*, paragraph 4.7.

1.56. *Breakdown by type of product.* While the recommended classification is by activity of the affiliate according to ISIC, Rev.4, their national versions and ICFA, Rev.1, countries are encouraged to work towards disaggregating sales (turnover), output, and exports and imports by product as a longer term goal. To the extent possible, the breakdown should be on a basis compatible with EBOPS 2010 and CPC, Version 2, so as to facilitate comparisons with resident/non-resident trade in services classified on this basis. If this level of specificity cannot be achieved, countries may wish to disaggregate sales (or output) in each industry as between total goods and total services as a first step towards achieving a product basis.

1.57. *Partner country attribution of FATS variables.* Such variables as the amount of turnovers and the number of employees can be broken down by partner country. This makes foreign affiliate statistics more useful. Indeed, the attribution by country shows in which country the service production has taken place, and which country should be regarded as the country of the parent of affiliates producing services.

1.58. In compiling foreign affiliate statistics by country, data for inward FATS should be compiled, as a first priority, according to the ultimate controlling institutional unit (UCI). For inward FATS, the recommendation in the MSITS2010 is to attribute FATS variables to the country of the ultimate investor (ultimate controlling institutional unit), but in considering that information on immediate investors (first foreign partner) may be available as a by-product of linkages to FDI data, and to facilitate comparisons with those data, countries are encouraged to make available some data classified on the country of the first foreign parent.

1.59. For outward FATS geographical attribution should be compiled regardless of whether the direct investor in the compiling economy is the UCI unit or is, instead, an intermediate investor in an ownership chain. MSITS 2010 recommends that the location of the foreign affiliate should be attributed to the country where the affiliate is resident.

1.60. *Valuation* in FATS follows the same basic BPM6 principles applied to the transactions between residents and non-residents. In some cases, actual exchange values between affiliated enterprises may not represent market prices. When there is an international transaction between two affiliates of a multinational enterprise (MNE), it is expected that the value of the transaction to the exporting affiliate will be equal to the value of the transaction for the importing affiliate and hence they will cancel out, leaving the MNE's overall profits unchanged, no matter what price it chooses to use to value the transaction³⁹. However, in a world where there are taxes on international transactions and where the rates of business income taxation differ across countries, the multinational enterprise will have definite financial incentives to *choose strategically* the "transfer price" to minimize the amount of tax paid to both jurisdictions. Transfer prices are the prices at which an enterprise transfer physical goods and intangible property or provide services to associated enterprise. Because transfer pricing might be under or over invoiced in an unrelated transaction, adjustment should be made when these exchange values do not represent market prices.

³⁹ This assertion requires the proviso that there are no trade taxes on the transaction and that business income tax rates are equal in both countries.

1.61. OECD Transfer Pricing Guidelines⁴⁰ recommending that, for income taxation and customs valuation purposes, enterprises follow the arm's length standard, i.e., set the transfer price equal to the price that two unrelated parties would negotiate when trading the same or substantially similar products under the same or substantially similar circumstances. The OECD guidelines propose five methods to adjust transfer prices by arm's length standard:

- i. *Comparable Uncontrolled Price (CUP)* compares the price charged for property or services transferred in a controlled transaction to the price for property or services transferred in a comparable uncontrolled transaction in comparable circumstances;
- ii. *Cost Plus Method* evaluates the arm's length nature of intercompany charge by reference to the gross profit mark-up on costs incurred by suppliers of property (or services) for tangible property transferred (or services provided). It compares the gross profit mark-up earned by the tested party for manufacturing the product or for providing service to the gross profit mark-ups earned by comparable companies;
- iii. *Resale price (minus) method* analyses the price of the product that a related sales company charges to an unrelated customer to determine an arm's length gross margin, which the sales company retains to cover its sales, general and administrative expenses, and still make an appropriate profit;
- iv. *Transactional Net Margin method (TNMM)* compares the net profit margin (relative to an appropriate base) that the tested party earns in the controlled transactions to the same net profits margins earned by the tested party in comparable uncontrolled transactions or alternatively by independent comparable companies;
- v. Finally the *Profit Split Method*: i) identify the profits to be divided between the associated enterprises from the controlled transactions: ii) these profits are divided between the associated enterprises based on the relative value of each enterprise's contribution, which should reflect the functions performed, risks incurred and assets used by each enterprise in the controlled transaction.

1.62. The methods for estimating the arm's length transfer prices are based on the comparability of the transactions. Transactions are considered comparable when their "economically relevant characteristics" are the same, or if they differ, the differences have no material impact on the results. In practice internal and external transactions are unlikely to be exactly comparable, therefore the OECD Guidelines recommend that material differences are identified, quantified and adjusted for in determining the arm's length transfer price. Moreover, since transfer pricing is not an exact science, the Guidelines recommend that transfer prices be set inside a range of acceptable arm's length prices, called the arm's length range.

1.63. *Institutional arrangements for FATS*. The proper institutional arrangements are extremely necessary for the development of the FATS. FATS have their origin in the

⁴⁰ Available at: <http://www.oecd.org/ctp/treaties/oecdapprovesthe2010transferpricingguidelines.htm>.

foreign direct investment statistics through being a subset of them. At the present time, FATS statistics find their place in the structural business statistics, especially in the case of the INWARD FATS, and they are therefore traditionally compiled by the national statistics offices (NSOs). The OUTWARD FATS can also be produced within the scope of the structural business statistics, but they may often be compiled from administrative records connected with the foreign direct investment of a ministry in the economic or commercial area. For both inward and outwards FATS compilation, close cooperation between SBS and SITS compilers and combining surveys of FDI and FATS yield a number of advantages, including reduction of reporting burden and cost effectiveness. FATS compilers may also consider accessing surveys based on a framework taken from business registers of international groups prepared by supranational bodies (as is the case of the Eurostat EuroGroups Register) or private consultants (such as Dun & Bradstreet or Bureau Van Dijk), while recognizing the data limitations and data quality concerns with such private sources and the generally acknowledged superiority of NSO-owned business registers when available. Current interest in the phenomenon of economic globalisation and what it entails in terms of delocalisation of production and outsourcing of the production functions of multinational companies, the new approach of international trade statistics in terms of value added, and their relation to global value chains, have revealed the importance of reinforcing these statistics.

1.64. In most cases, the compilation of FATS is a cooperative effort of several agencies such as national statistical office, central bank, ministry of economy and commerce.

1.65. *EU approach to FATS.* A close connection exists between balance of payments statistics and FATS in the case of the European Union (EU), where the actual legislative act currently is in force governing these statistics in all the EU Member States. It encompasses conjointly in a single regulation the balance of payments (BoP), SITS and foreign direct investment (FDI) statistics. However, the current need of users, especially within the GATS framework, to have more comprehensive information on international services transactions and on their mode of supply, as well as on the operators taking part in these and their main features, is leading to a methodological and regulatory approach of the SITS statistics beyond the primary objective of producing the balance of payments, which calls for better coordination between the different institutions. There are plans for a future European project to characterise the companies that undertake international services transactions (Services by Enterprise Characteristics (STEC)) in the same way as is already done with goods (Trade by Enterprise Characteristics (TEC)). It should be mentioned that Eurostat prepared and published a special FATS recommendations manual.⁴¹

D. Statistical framework for mode 4

1.66. The purpose of this section is to provide an overview of MSITS 2010 statistical framework for the data compilation on mode 4 by focusing on its key concepts and their relationships with other elements of MSITS 2010 conceptual framework as well as with the conceptual frameworks of some other relevant statistical domains. Sources of data relevant to collection of data for mode 4 are described in Chapters 5-11. Chapter 14 provides guidance on collection, compilation, and a simplified allocation of value of the

⁴¹ Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-12-016/EN/KS-RA-12-016-EN.PDF.

resident/non-resident services transactions to mode 4, Chapter 15 deals with the compilation of mode 4 data in the FATS context. Chapter 16 focuses on challenges and good practices in the compilation of data on the natural persons crossing the borders in order to provide services under mode 4.

1.67. The GATS has a special Annex which deals with the movement of natural persons supplying services under the agreement. It is presented in box 1.2 below.

Box 1.2

GATS Annex of Movement of Natural Persons Supplying Services Under the Agreement

1. This Annex applies to measures affecting natural persons who are service suppliers of a Member, and natural persons of a Member who are employed by a service supplier of a Member, in respect of the supply of a service.

2. The Agreement shall not apply to measures affecting natural persons seeking access to the employment market of a Member, nor shall it apply to measures regarding citizenship, residence or employment on a permanent basis.

3. In accordance with Parts III and IV of the Agreement, Members may negotiate specific commitments applying to the movement of all categories of natural persons supplying services under the Agreement. Natural persons covered by a specific commitment shall be allowed to supply the service in accordance with the terms of that commitment.

4. The Agreement shall not prevent a Member from applying measures to regulate the entry of natural persons into, or their temporary stay in, its territory, including those measures necessary to protect the integrity of, and to ensure the orderly movement of natural persons across, its borders, provided that such measures are not applied in such a manner as to nullify or impair the benefits accruing to any Member under the terms of a specific commitment*.

* The sole fact of requiring a visa for natural persons of certain Members and not for those of others shall not be regarded as nullifying or impairing benefits under a specific commitment.

D.1. Categories of service suppliers under mode 4

1.68. According to GATS the service supplier under mode 4 is a natural person of one Member who is present in the territory of any other Member to provide service to the consumers of that Member. MSITS 2010 statistical framework for mode 4 identified several major categories of such natural persons⁴² and advised countries to use these categories to compile data as well as to provide even more detailed breakdown to address the specific needs, where required. Whereas GATS mode 4 is based on the presence of a natural person in another Member state, BPM6 statistics are based on residency (and resident – non-resident transactions), which may cause an issue in compilation, if the person would be present in another Member state for a prolonged period of time. The data compiler needs to be aware of this potential problem.

1.69. The following major categories of natural persons identified in MSITS 2010 are:

⁴² See MSITS 2010, paragraph 5.19.

- i. *Contractual service suppliers, self-employed*: a self-employed person of member B enters member A in the context of a service contract with a service consumer in member A.⁴³ For example, a self-employed lawyer delivers legal advice to foreign consumers. However, determining if the specialist is a self-employed person or an employee of the “client” may not always be a straightforward matter.⁴⁴ If an employer-employee relationship exists, then the individual would not be counted as a mode 4 natural person.
- ii. *Contractual service suppliers, employees of a juridical person*: employees of the service supplier in member B are sent to member A in order to supply a service within the context of a contract between their employer and a service consumer in member A. For example, computer services are supplied to consumers of A by an employee of a foreign information technology services enterprise of member B, who is sent to member A to deliver this service.
- iii. *Intra-corporate transferees and foreign employees directly recruited by foreign established companies*: the service supplier of member B has a commercial presence in member A and sends its employee to its affiliate in A or the affiliate recruits directly foreign employees.⁴⁵ The supply of the service to the consumer, however, is taking place through the affiliate (Mode 3). For example, a surgeon is transferred temporarily to work in a branch of his employing hospital in a country abroad. The Mode 4 commitment guarantees the right of the supplier in B to send staff to A (or the affiliate to recruit foreign staff) in order to supply a service through its local affiliate.⁴⁶ Intra-corporate transferees are a particularly relevant subgroup, as many commitments are made and negotiations carried out with respect to this category of persons.
- iv. *Services sellers and persons responsible for setting up commercial presence*: services sellers are persons who are attempting to establish contractual relationships for a service contract, and persons responsible for setting up commercial presence are the persons who enter member A in the context of the negotiation for a service contract or for setting up the establishment of an affiliate in member A.⁴⁷ There is no international supply of services in economic terms and consequently no accompanying transaction that is taking place, at least initially. Their movement, in order to conduct negotiations, is

⁴³ Trade negotiators often refer to this category as that of “independent professionals”. Some self-employed persons may also establish themselves in the host market and supply services from within this territory as per a relevant Mode 3 commitment. Although a Mode 4 commitment can guarantee the right for such persons to be present in this territory, it is considered in *MSITS 2010* that the supply of the service is carried out through a commercial presence.

⁴⁴ *MSITS 2010*, box V.2.

⁴⁵ For foreigners directly recruited by the foreign affiliate, there may be ambiguity with respect to their coverage under Mode 4, as one could consider, in particular for foreigners recruited from within the host economy that these individuals are seeking to access the employment market of the host economy.

⁴⁶ Note that services can also be delivered by foreign affiliates without involvement of a Mode 4 component.

⁴⁷ Trade negotiators often refer to these categories as encompassing “business visitors”. Business visitors as defined in a GATS context are not the same as business visitors or travellers as defined in international statistical frameworks. Those frameworks refer to travellers/visitors who enter in the territory of another economy for any business or professional reason (that is to say, those frameworks cover, in addition to service sellers, many of those covered under the definition of contractual service suppliers).

guaranteed by commitments under Mode 4. The negotiations will then eventually lead to the future supply of services through either of the modes.

D.2. An overview of data to be collected

1.70. Data to be compiled in connection with mode 4 of supply of service consists of two categories: non-monetary data such as the number of natural persons crossing borders to deliver such services (or the number of trips of such persons) over the reference period and the value of services delivered by such persons. A brief overview of the characteristics of the data to be compiled in the context of mode 4 is presented below (for details see Chapter 16).

1.71. *Length of stay.* Although GATS mode 4 covers the temporary movement and presence of natural persons, there is no clear definition of the term “temporary”. The length of stay in the GATS schedules of commitments mainly depends on the category of persons involved (contractual service supplier as self-employed or employee, service sellers, etc.) or the level of skills. However, lengths of stay indicated in commitments made by a country should be considered as a minimum guaranteed treatment a country is ready to consider for the foreign service providers. The length of stay is one of the key variables needed for the assessment of the importance of mode 4 for delivering services and efforts should be made to compile it in addition to the number of persons. Also, availability of data on length of stay can be used to determine residency of the person.

1.72. It should be noted that the permanent migration is excluded from the mode 4 movements (the GATS does not apply to measures affecting residence, citizenship or employment on a permanent basis).

1.73. *Purpose of stay and skill level.* The purpose of stay under mode 4 is to provide service under a service contract. Therefore, persons crossing the borders and present in another county for other purposes are excluded. For example, excluded are persons seeking to access the employment market, persons present for the production of goods or for the provision of services supplied under governmental authority. The GATS mode 4 does not restrict the skill level of the covered natural persons. However, this Guide advises countries to follow the International Standard Classification of Occupations (ISCO-08) if such data are compiled⁴⁸.

1.74. *Value of the services delivered.* It should be noted that the value of services supplied under mode 4 should be compiled only in the case of contractual service suppliers.⁴⁹ This information is not needed for intra-corporate transferees and foreign employees directly recruited by the foreign affiliate, or for services sellers or persons responsible for setting up commercial presence. For the former, the services supplied are attributed to the service supplier (that is, the juridical person) and are recorded under Mode 3 (the Mode 4 commitment enables the presence of the person in order for the service supplier to supply the service via Mode 3); and for the latter, there is no service transaction (the transaction takes place at a later stage).

⁴⁸ Available at the ILO website: <http://www.ilo.org/public/english/bureau/stat/isco/>.

⁴⁹ MSITS 2010, paragraph 5.27.

1.75. The value of the services delivered by the contractual service suppliers should be measured following the MSITS recommendations on valuation of services (see paragraphs 3.32 – 3.40) and should be recorded depending on the category of person, as follows⁵⁰:

i. *Contractual service suppliers as employees of the foreign-based service supplier*: A service provider sends his employee to the other country in order to supply the service. The transaction corresponding to the service contract remains between a resident and a non-resident and will be recorded as an export or import in the type of services concerned, regardless of whether that person stays abroad for a year or more or less than a year. In the majority of cases, the presence of contractual service suppliers as employees will not imply substantial operations that can be identified separately from the overall operations of the service supplier. A group of persons per se cannot be considered to constitute a branch or representative office (if this were the case, the supply would fall under Mode 3, commercial presence);

ii. *Contractual service suppliers, self-employed*. A self-employed person moves abroad in order to supply a service. If the person stays less than a year, the corresponding transaction should be recorded as an export/import of services. If it is possible and if the amounts are believed to be significant, information on self-employed persons under Mode 4 should be provided separately. However, if he or she stays or intends to stay a year or more, then in principle he or she will qualify as a resident of the host economy and the transaction corresponding to the service contract will not be recorded as a service transaction in the balance of payments statistics.

1.76. Measuring or estimating the value of mode 4 trade in services can, therefore, be done using data compiled for the balance of payments purposes, except for *Contractual service suppliers, self-employed* who stay or intend to stay in the host country for more than a year. If the intention of the person is to operate from a base in the host economy by establishing a commercial presence (as per a relevant Mode 3 commitment), then this person's transactions will not be captured by FATS surveys, as the UCI will be a resident of the host economy. Rather, FATS could be used to capture the number of intra-corporate transferees.

1.77 Self-employed persons staying more than a year (still in the context of a service contract) will, in general, represent a small proportion of the mode 4 population. In addition, although in principle the residence of the persons would change, it may be difficult in practice for compilers to identify (or even consider) that the residence has changed if the length of stay is just for a few months more (e.g. 2-3 months) and the transactions would still be recorded under the service account.

1.78. If the stay is longer the person is considered as establishing the residency in the host country. If deemed important these self-employed natural persons on one WTO member acquiring residency (in the MSITS2010 sense) in another country should be separately identified. However, it is important to note that such persons would not be covered by in the proposal set out in this Guide (i.e. use balance of payments services statistics and FATS to estimate the international supply of services according to the four modes, as the UCI will have become a resident of the host economy. Compiling economies that believe the category of self-employed persons established in an economy

⁵⁰ MSITS 2010, paragraph 5.47.

other than their own (the compiling economy on the “inward” side or on the abroad “outward” side) is important may wish to estimate the value of sales/output of their services to consumers in the host economy, in the home economy and in third economies.⁵¹

1.79. *Balance of payments services components where no single mode is dominant.* A given balance of payments service item generally includes transactions corresponding to several modes. If detailed balance of payments services statistics are compiled (that is, according to EBOPS 2010), it may be easier to allocate some of the transactions in cases where Mode 1 is deemed to be the dominant mode and then concentrate subsequently on the remaining transactions. Table 1.1 presents the services categories that are believed to be supplied through either dominant mode and those where more refinement is necessary.

Table 1.1⁵²

Simplified allocation of FATS and balance of payments data to modes of supply^a

	FATS (sales or output) ^b	Balance of payments trade in services					
		Mode(s)					
		Mode 3	1	2	4	1 and 4	2 and 4
Manufacturing services on physical inputs owned by others	X		X				
Maintenance and repair services n.i.e.	X		X				
Transport	X	X					
• Passenger	X	X					
• Freight	X	X					
• Other	X						
– Postal and courier services	X	X					
– <i>Service to domestic carriers in foreign ports (and vice versa)</i>	X			X			
– <i>Other</i>	X	X					
Travel			X				
• Goods							
• Local transport services	X		X				
• Accommodation services	X		X				
• Food-serving services	X		X				
• Other services	X		X				
Construction	X						X
• Goods							
• Services	X						X
Insurance and pension services	X	X					
Financial services	X	X					
Charges for the use of intellectual property n.i.e. ^c	X	X					
Telecommunications, computer, and information services	X					X	
• Telecommunications services	X	X					

⁵¹ MSITS 2010, paragraph 5.69.

⁵² Ibid., table V.2, pages. 132-133.

	FATS (sales or output) ^b	Balance of payments trade in services						
		Mode(s)						
		Mode 3	1	2	4	1 and 4	2 and 4	3 and 4
• Computer services	X					X		
• Information services	X	X						
Other business services	X					X		
• Research and development services	X					X		
• Professional and management consulting services	X					X		
• Technical, trade-related and other business services	X							
– Architectural, engineering, scientific and other technical services	X					X		
– Waste treatment and de-pollution, agricultural and mining services	X							
◦ Waste treatment and de-pollution	X						X	
◦ Services incidental to agriculture, forestry and fishing	X				X			
◦ Services incidental to mining, and oil and gas extraction	X				X			
– Operating leasing services	X	X						
– Trade-related services	X	X						
– Other business services n.i.e.	X					X		
Personal, cultural and recreational services	X					X		
Government goods and services n.i.e.								
• <i>Government goods n.i.e., credits and debits</i>								
• <i>Government services n.i.e. credits</i>								
• <i>Government services n.i.e. debits</i>								
– <i>Commercial services purchased in host economies</i>								
◦ <i>Government units in diplomatic and similar enclaves</i>						X		
◦ <i>Personnel from home economy and dependents</i>			X					
– <i>Other commercial services n.i.e. purchased by government</i>						X		
– <i>Non-commercial services acquired by government</i>								
Distribution (wholesale, retail trade) services	X	X						

Note. The table identifies the dominant mode(s) of supply used in resident/non-resident transactions; for FATS, all sales/output in the host economy are supplied through Mode 3 (see the cells containing an "X"). If, for a compiling economy, allocation of resident/non-resident transactions does not necessitate the separate identification of modes, or if it has difficulties in implementing the allocation according to this table because such implementation is too burdensome or costly for compilers or reporters), the rules can be simplified by concentrating on the 12 major balance of payments services transactions, FATS and, if possible, the estimated value for distribution services associated with cross-border trade (see the cells containing a boldface "X"). The dark shaded rows in table V.2 set out categories regarded as not comprising the supply of services from a GATS perspective. Row items given in italics are not separately identified in the EBOPS 2010 classification, but are presented to improve clarity with respect to the links of existing balance of payments items with modes of supply.

^a The allocation may vary from country to country (in respect of general needs as well as for specific sectors, data-collection system, resources, etc.).

^b In the economic territory where the affiliate is established. If it is not possible to break down sales or output by product using EBOPS 2010, then provide sales or output of services, broken down by activity using ICFA, Rev.1.

^c There is a certain degree of uncertainty with respect to the coverage of certain charges for the use of intellectual property, n.i.e. (see paragraph 5.43).

1.80. With a view to facilitating the analysis and compilation of service transactions between residents and non-residents by modes of supply, it is recommended that, if estimates cannot be provided for the subdivision of the transaction value by modes, the transaction be allocated to the most important mode in terms of the time and resources associated with it.⁵³

1.81. To allocate transactions to modes, a number of compiling guidelines need to be elaborated on the basis of rules of national legislation and/or accounting conventions. From a general point of view, the possibility of estimating Mode 4 flows within the balance of payments services account would help improve the estimations of the international supply of services by modes. In order that further information may be collected with respect to Mode 4, a clear list of questions needs to be developed to help survey respondents and/or compilers identify whether the payment for a service contract refers to the supply of a service through Mode 1, 2, 3 or 4. The rules applied to compile these estimates by mode of supply, and the list of items for which estimates of Mode 4 are necessary, should be established depending on each country's interest. That list should not necessarily strictly be limited to the services items identified in this chapter.⁵⁴

1.82. Given the complexity of services contracts (that is, the several modes for supplying the service), the allocation should be made on a dominance basis. Compilers should concentrate on services categories relevant in the context of activity (for example, construction, computer, engineering, legal, agricultural services) and not necessarily attempt to differentiate Mode 4 from other modes for services where this mode of supply is not believed to be an important component.⁵⁵

1.83. There are various options that would help determine whether a transaction should be allocated to Mode 4 or not:⁵⁶

i. Indicate whether the supply of the service involved the physical presence of foreign individual(s), whether as self-employed or as employee(s), sent to the compiling economy by their non-resident company. If supply of the service did involve the presence of these persons, how was most of the value of the service supplied (in terms, for example, of time and/or resources involved)? In other words, if most of the service was supplied by fax, e-mail, etc., with the supplier remaining in its own country and the person(s) involved going just to supervise a final stage, then the service is mostly Mode 1, but if the embodied knowledge went with the person(s) and was transmitted directly to the client, then the service is mostly Mode 4.

ii. Define modes of supply in surveys and ask respondents to allocate transactions themselves. If the transaction involves various modes of supply, the questionnaire should suggest allocating the transaction to the most important mode in terms of the time and resources associated with it. While this option will be costly and very burdensome for respondents, it could be used for specific service sectors in which countries have a particular Mode 4 interest.

⁵³ MSITS 2010, paragraph 5.56.

⁵⁴ Ibid., paragraph 5.57.

⁵⁵ Ibid., paragraph 5.58.

⁵⁶ Ibid., paragraph 5.59.

iii. Add a question related to the estimated share of the inputs for the related services trade.

1.84. The modes for which questions are formulated under the second and third options need to be clearly determined according to the balance of payments services transaction for which information is being sought. For example, for *construction*, it would be relevant to refer only to Modes 3 and 4, whereas for *computer services*, Modes 1 and 4 would be more appropriate and for *waste treatment and de-pollution*, Modes 2 and 4.⁵⁷

1.85. Compilers should also consider that questions need to be formulated differently depending on whether it is exports or imports that are involved (an importer may have less information on the shares of different modes in the supply process and/or the breakdown of inputs in the service supply), particularly in respect of the Mode 1/Mode 4 distinction.⁵⁸

1.86. It may be difficult to allocate transactions by mode of supply when a service supplier and a client are located in two different economic territories, and commercial presence of the supplier in a third territory is involved. If service payments relating to the service contract are made directly between the client and the supplier, then it will be possible to allocate the transaction to the relevant mode(s). However, if the payment is made by the client to the affiliate and most (or part) of the service is supplied by the parent company, it will be difficult to define the mode of supply and to determine the direction of the flow.⁵⁹

⁵⁷ Ibid., paragraph 5.60.

⁵⁸ Ibid., paragraph 5.61.

⁵⁹ Ibid., paragraph 5.62.

Chapter 2 Legal framework

2.1. *Scope.* This chapter stresses the importance of the legal framework for international trade in services statistics and FATS and consists of the following sections: The importance of the legal framework (Section A), Legal acts governing content and availability of data sources (Section B), Legal acts regulating institutional arrangements (Section C) Legal acts protecting confidentiality of reported data (Section D) and Country practices (Section E).

A. The importance of the legal framework

2.2. *Legal framework.* The laws and legally binding regulations that govern the data provision relations between members of the national statistical system and data reporters as well as all other aspects of data compilation and dissemination constitute the legal framework for SITS.

2.3. *Types of relevant legal acts.* Legal acts relevant for statistics on international trade in services and FATS exist at different levels and include legal acts regulating the collection, processing and dissemination of trade statistics and the working relations of the concerned agencies; and the legal acts protecting the confidentiality of information. The structure of the legal framework can vary from country to country. Often there is a national statistical act establishing the mandate of the national statistical authority and governing general statistical issues, e.g. establishing a reminder and penalty system for enterprises failing to comply with the reporting obligation. The national act could also identify statistical areas that are part of the mandate. In addition to the general act, additional acts can establish more specific provisions for the data content or the specific circumstances under which the data must be reported to other national agencies, such as central banks, and/or defining the valid media and frequency of reporting and dissemination.

2.4. If a country becomes a party to an international convention or adopts international recommendations, it then needs to incorporate the binding provisions and non-binding recommendations of those conventions in its national laws and regulations. In this connection, it should be noted that in the field of international trade, many international agreements exist to govern transactions in goods and services. In a similar sense, international recommendations for trade statistics should be properly reflected in national laws or regulations of the country. For example, the results of the Uruguay Round of Multilateral Trade Negotiations contain numerous legal obligations of the WTO members and are incorporated in the national legislation. The international recommendations, the MSITS2010 and associated implementation guidelines, provide the foundation for the data to be collected. These recommendations must be supported by national legal acts in order to give the statistical office a clear mandate for collecting the necessary data elements.

2.5. In some regions there can be legally binding international agreements which impact the national definition of the scope of SITS and the national legal arrangements in the organization of the necessary statistical process. For example, in the European Union Regulation (EC) No 184/2005 of the European Parliament and of the Council of 12 January 2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment (BoP Regulation) and in the Regulation (EC) No 716/2007 of the European Parliament and of the Council of 20 June 2007 on Community statistics on the structure and activity of foreign affiliates (FATS Regulation)

2.6. *The importance of the legal framework for SITS and FATS.* A well-established legal framework is the foundation of the efficient statistical production process as it:

i. Gives the statistical compiler a clear mandate to collect data, compile and disseminate the statistics, and that makes other relevant information (e.g. supplementary data sources) available to the compiler. In view of the multiplicity of data sources necessary for SITS and FATS compilation, a strong legal authority to collect data are of special significance.

ii. Identifies and defines the national competent authority and the roles other governmental agencies should play in particular statistical domains. To ensure a well-functioning cooperation and coordination between the national agencies involved in the statistical process, proper institutional arrangements should be established to supplement the legal framework (see Chapter 3 for details).

iii. Is a prerequisite for the recognition by the statistical community of the production of quality official statistics, including SITS and FATS. For example, the first element of the quality assurance framework recommended by the UN Statistical Commission calls for the availability of the legal framework that establishes the national statistical system specifies its members and designates a coordinating body⁶⁰. This approach is promoted by the specialized international organizations having the responsibility in particular areas of statistics. For example, the IMF Data Quality Assessment Framework (DQAF) for Balance of Payments and International Investment Position Statistics consider the existence of a legal framework that assigns primary responsibility as well as the authority to an agency (agencies) for the collection, processing, and dissemination of the statistics as one of the main prerequisites of quality⁶¹.

iv. Is likely to increase public trust in the statistics. Statistical confidentiality is a key element in collecting and storing SITS and FATS and related micro-data and disseminating statistical products. Thus, the legal framework should include provisions guaranteeing the protection of individual data and restricting the use of such data to official statistical purposes only. If individual data are disclosed in the statistics, or if collected micro-data are used for non-statistical purposes, enterprises are less likely to submit accurate information – or to respond at all.

v. Assists in the implementation of an integrated approach to SITS and FATS, as only well-coordinated efforts of several agencies may guarantee a successful compilation and dissemination of such statistics. The stronger the legal powers of coordination at the center of the statistical system, the greater the chance of integrating the statistics effectively.⁶² If the body (or bodies) responsible for SITS and FATS compilation and dissemination is backed by the legal power to apply the tools of coordination, its capacity to coordinate is much greater.

⁶⁰ NQAF, page 9.

⁶¹ IMF, DQAF for Balance of Payments and International Investment Position Statistics (2012), page 1; available at: http://dsbb.imf.org/images/pdfs/dqrs_bop.pdf.

⁶² Guidelines on IES, paragraph 4.5.

vi. Provides the possibility to impose fines on data reporters, including enterprises, in cases of non-compliance in reporting required information (including delays in reporting, missing or unreported data, and errors, etc.).

2.7. *Importance of being proactive.* In many instances, the introduction of necessary improvements to the quality of official statistics may be significantly facilitated by developing appropriate legal provisions, or, if such provisions already exist, by amending them with regards to the collection of administrative data to be used for statistical purposes. The national agency or agencies responsible for the overall compilation and dissemination of SITS and FATS should, whenever appropriate, actively participate in the discussion of respective national legislation or relevant administrative regulations in order to establish a solid foundation for the high quality and timeliness of these statistics.

B. Legal acts regulating institutional arrangements

2.8. Often more than one national institution is involved in the compilation of SITS and FATS. However, it is either the statistical office or the central bank that is the competent national authority in this statistical domain. Each country has its own institutional arrangements and the authority responsible for the production and dissemination of the statistics should be formally identified.

2.9. In many countries, a statistics act or formal legal arrangement exists under which the central bank or statistical agency has the authority to collect the necessary information or to conduct surveys. In some economies, responsibility for collecting data for balance of payments and FATS purposes may be split between two or more agencies. For example, central banks may have responsibility for obtaining data from financial institutions, while the national statistical agency may have responsibility for the non-financial entities and for foreign affiliates. In other economies, an investment approval agency or a financial supervisor may be a very important source of information about cross-border transactions in services. In this connection it is important that the legal authority for the collection of the data allows all appropriate agencies to access the information.

2.10. When the compiling statistical authority is dependent upon data from other national institutions, close cooperation and coordination is needed. Such cooperation is facilitated by the appropriate legislation. In this context, it is a good practice that compilers actively participate, whenever appropriate, in the necessary modifications to national legislation or relevant administrative regulations in order to establish a solid foundation for enhancing the quality and timeliness of SITS and FATS. It is a good practice that the national laws and regulations define the rights and responsibilities of all agencies involved in the collection, exchange, processing, compilation and dissemination of SITS and FATS, so that those agencies will be in a better position to establish the necessary institutional arrangements detailing their involvement in the statistical process. For instance, if adequate legal provisions are in place, the responsible agency could establish, faster and more efficiently, a working arrangement with the organizations keeping records relevant to SITS and FATS. See chapter 3 for further discussion of institutional arrangements.

C. Legal acts governing content and availability of data sources

2.11. If the statistics are based on administrative records, it would be prudent to include a paragraph in the legal text that gives the statistical office a legal right to access these data sources. Such language would facilitate the cooperation between the institutions involved,

thereby contributing to timely data deliveries and it ensures transparency vis-à-vis the enterprises about the reuse of data.

2.12. *Legal acts and customs data.* One of the administrative sources relevant to SITS is customs records, which can contain valuable information needed for the compilation of SITS. The World Customs Organization (WCO) is the international platform at which countries reach legal agreements on customs regulations including those relevant to compilation of data on international freight and insurance related to the transportation and customs clearance of goods. From an SITS perspective, the most relevant WCO convention is the revised international convention on the simplification and harmonization of customs procedures (known as the revised Kyoto Convention, or RKC)⁶³, which provides standards for various customs procedures (for example, on inward and outward processing of goods which have to be understood when compiling, for example, such items as manufacturing services on physical inputs owned by others. The WCO is also actively participating in setting legal provisions for the customs valuation of goods which have significant consequences valuation of the related international transactions in services. In this context it should be noted that it is the WTO's responsibility to formally adopt such provisions and amend them as necessary.⁶⁴

2.13. *Legal acts and ITRS.* Much of the data for SITS and FATS come from statistical surveys or from the international bank transaction reporting system (ITRS). Most ITRS (formerly known as foreign exchange record systems) evolved as by-products of foreign exchange control acts which were and in many instances remain legally binding. The statistical compilers should be well aware of the contents of the legal provisions underpinning the national ITRS and make full use of them. Also, as countries are planning to remove certain legal obligations the compilers should prepare themselves well in advance to make necessary adjustments in their data collection arrangements.

2.14. *Legal acts and statistical surveys.* The importance of a well-established legal basis for SITS- and FATS-related surveys is recognized and promoted by all concerned international and regional organizations. For example, according to the IMF, good legal authority needs to state that reporting of statistical information is mandatory, especially for large enterprises.⁶⁵ In the majority of countries, such a legal basis does exist⁶⁶ and it is a good practice to explicitly refer to such legislation in the SITS and FATS survey forms.

2.15. *Legal acts and FATS.* Compared to outward FATS, inward FATS is often easier to collect because the relevant enterprises are present in the compiling economy. Often only information about the foreign-owned share of a domestically-located enterprise needs to be collected, which, in turn, can be linked to existing information in the national business statistics. In either case, it is important that the compilers have a clear legal mandate for collecting the data. In the case of outward FATS, where the relevant company is located

⁶³ The International Convention on the Simplification and Harmonization of Customs procedures entered into force in 1974. The revised Kyoto Convention (RKC) was adopted in June 1999. The provisions contained in the RKC aim at the facilitation of trade but at the same time make customs records a highly standardized and reliable data source for trade statistics across countries. The RKC comprises a Body, a General Annex and Specific Annexes.

⁶⁴ SITS compilers should take note of the WTO Agreement on Customs Valuation; see IMTS 2010, Annex D.

⁶⁵ See BPM6 Compilation Guide, paragraphs 2.5.

⁶⁶ For example, Act on Statistics Denmark, section 9a states: "Businessmen, who sell services to customers abroad or buy services abroad shall at the request of Statistics Denmark supply information on the value of the services, on their nature and on which country the services have been delivered to or received from."

abroad, the legal acts should provide a mandate for statistical compilers to require information from domestic companies on their foreign affiliates located in other countries. This aspect might cause difficulties for compilers because of data availability and sensitivity.

D. Legal acts protecting confidentiality of reported data

2.16. According to the UN fundamental principles of official statistics, individual data collected by statistical agencies for statistical purposes are to be strictly confidential and used exclusively for statistical purposes (UN Statistical Commission, 14 April 1994).⁶⁷ Statistical confidentiality is a key element in producing reliable statistics as it is important to gain the trust of the data providers. Thus, it should not be possible to obtain identifiable enterprise specific information from the disseminated statistics. To ensure confidentiality and proper use of data, legal provisions should be established.

2.17. The legal acts on confidentiality could preferably also address the use of administrative data for official statistical purposes. In particular, it is important that legal acts state that administrative data sent to the statistical authority become statistical data on receipt, which implies that validation and editing of the data undertaken by the statistical agency should not be shared with the administrative authority having provided the data.

2.18. *Confidentiality of customs declarations.* In general, customs declarations are not subject to the same level of confidentiality measures as other statistical instruments. By design, customs declarations are used to assess tariffs, fees and taxes, and to enforce multiple agencies' requirements for admissibility of goods into the country or to enforce the country's exports laws and regulations. Once transmitted to the agency responsible for the compilation of international trade statistics, in many cases, that agency treats the information as confidential. However, in most cases, the compiling agency does not subject all data to rigorous disclosure reviews, and rather apply 'passive disclosure' methods by which importers/exporters inform the agency of possible situations for investigation and for some form of statistical suppression. This fact should be well noted by the statistical compilers while considering access to customs declarations for obtaining, for example, information on trade-related services.

2.19. The compiling agency may also establish appropriate regulation to safeguard confidentiality in the exchange of basic information among agencies. However, regardless of the legal status of confidential information, whether personal or commercial, this information should not be excluded from the trade statistics and should be reported in aggregate form so that the confidential aspects of these operations cannot be identified (see Chapter 20 for details). It is further desirable that national legislation defines rights and responsibilities regarding access to the micro-data, highlighting the appropriate principles and procedures. The responsible agency should cooperate with the national legislature to establish such laws.

⁶⁷ UN Statistical Commission, 14 April 1994. <http://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx> and <http://unstats.un.org/unsd/dnss/gp/FP-New-E.pdf>. In addition, the General Assembly adopted Resolution A/RES/68/261 entitled "Fundamental Principles of Official Statistics (without a vote) thereby endorsing the Fundamental Principles of Official Statistics [...], as adopted by the Statistical Commission in 1994 and reaffirmed in 2013, and endorsed by the Economic and Social Council in its resolution 2013/21". The draft text, which was adopted without any changes, can be found in A/68/L.36 and at http://www.un.org/en/ga/search/view_doc.asp?symbol=A/68/L.36.

Box 2.1

Legal act on confidentiality - example of Members States of the European Union

Members of the European Union have to comply with the regulation on European Statistics (Regulation (EC) No 223/2009 of the European Parliament and of the Council) which contains provisions on confidentiality – below are listed some selected elements of article 20 on protection of confidential data:

(2) Confidential data obtained exclusively for the production of European statistics shall be used by the NSIs and other national authorities and by the Commission (Eurostat) exclusively for statistical purposes unless the statistical unit has unambiguously given its consent to the use for any other purposes.

(3) Statistical results which may make it possible to identify a statistical unit may be disseminated by the NSIs and other national authorities and the Commission (Eurostat) in the following exceptional case:

(a) where the statistical unit has unambiguously agreed to the disclosure of data.

Box 2.2

The Confidentiality Act of the Philippines

Confidentiality of data in the Philippines is based on provisions of the Commonwealth Act 591, Section 4. The Act states, inter alia, that data furnished to the National Statistics Office by an individual, corporation, partnership, institution or business enterprise shall not be used in any court or in any public office either as evidence for or against the individual, corporation, association, partnership, institution or business enterprise from whom such data emanates; nor shall such data or information be divulged to any person except authorized employees of the National Statistics Office, acting in the performance of their duties; nor shall such data be published except in the form of summaries or statistical tables in which no reference to an individual, corporation, association, partnership, institution or business enterprise shall appear. Any person violating the provisions of this section shall, upon conviction, be punished by a fine or by imprisonment, or by both. Strict compliance of Commonwealth Act 591 Sec 4 is being implemented for Philippine IMTS. Data being released are all in summary form and tables are in aggregate value with no reference to individual importer or exporter data. Value and Volume of import and export data are released only by commodity and by country. No identity of the exporter or the importer is indicated in the statistical tables.

E. Country experiences

E.1. Country experience: the United States

2.20. The legal framework underlying the U.S. data collection system for statistics on international trade in services TATS is quite strong. The authority to collect this information is ultimately delegated to the Bureau of Economic Analysis (BEA), a statistical agency within the US Department of Commerce. Two legal provisions deserve special mention.

2.21. The primary legal provision enabling BEA to collect information in a timely manner from relevant institutions is known as the International Investment and Trade in Services Survey Act (P.L. 94-472, 90 Stat. 2059, 22 U.S.C. 3101-3108, as amended; "the Act"). Provisions in the Act ensure that US entities (i.e., businesses, universities, hospitals, etc.) engaged in international investment and trade in services are required to report their international transactions on a periodic basis to the BEA. The Act specifies that the survey data may only be used for statistical and analytical purposes. Access to the data is limited to officials and employees (including consultants and contractors and their employees) of government agencies that are designated by the President to perform functions under the Act. Certain other government agencies may be granted access to the data under the Foreign Direct Investment and International Financial Data Improvements Act of 1990, but only for

limited statistical purposes. BEA is prohibited from granting another agency access to the data for tax, investigative, or regulatory purposes. BEA cannot publish or otherwise release the data collected on its surveys in a form that would allow the transactions of an individual reporter to be identified.

2.22. The other primary legal provision governing the collection of trade in services and FATS data is the Paperwork Reduction Act of 1995. By provisions of this act, US government surveys must undergo an approval process in which the agency in charge of collecting the data is required to demonstrate to the approving authority (the Office of Management and Budget) the following three conditions: (1) the intended data are necessary, (2) they cannot be obtained from an existing source, and (3) their collection does not place an unreasonable burden on respondents. As part of the survey design and clearance process, BEA publishes notices about proposed surveys in the Federal Register. In these notices, BEA requests comments from users and respondents on all aspects of the data collection, including BEA's estimate of the burden imposed by the reporting requirements. BEA considers all comments before making final decisions on the scope and design of its surveys. BEA makes every effort to balance the needs of data users for complete, accurate, detailed, and timely data and the concerns of respondents about the burden imposed by the reporting requirements. By convention, approval of a given survey must be renewed within 3 years.

E.2. Country experience: The United Kingdom

2.23. In the United Kingdom, the Office of National Statistics conducts the International Trade in Services Survey (ITIS) under Section 1 of the Statistics of Trade Act, 1947 to collect detailed information on trade in services by product, industry and country. It is a statutory enquiry and a key source of trade data in UK. The majority of ONS's business surveys are collected under statute: the Statistics of Trade Act 1947 (STA). Data obtained from business surveys under the Statistics of Trade Act 1947 (STA) are subject to a general prohibition on disclosure. However, the legislation permits disclosure to government departments or where the explicit consent of the respondent has been provided. Information collected through ITIS form part of UK's balance of payments and helps calculate Gross Domestic Product (GDP). However, this survey does not cover transportation, travel and banking services for which data is collected from other sources such as the International Passenger Survey and the Bank of England.

E.3. Country experience: Singapore

2.24. The Department of Statistics, Singapore conducts International Trade in Services Survey (TIS Survey) annually under Section 5 of the Statistics Act (Chapter 317) to collect information on services transaction of the enterprises of Singapore with non-residents. Singapore does not have ITRS and the results of this survey are used for preparation of balance of payments statistics as well as compilation of services trade statistics by major services categories and also by major trading destination or partner country break down. The Statistics Act makes it mandatory for the informants to furnish the information asked for the purpose of compilation of statistics. There are provisions for imposition of penalties under the Act for wilful refusal to provide information or submitting false information in respect of the requisition. The confidentiality of the information provided is also ensured under the Statistics Act.

E.4. Country experience: the Russian Federation

2.25. Legal and institutional basis for statistical data collection, compilation and dissemination thereof is provided by the Federal Law of July 10, 2002 No. 86-FZ "On the Central Bank of the Russian Federation (the Bank of Russia)", the Federal Law of November 29, 2007 No. 282-FZ "On Official Statistical Reporting and the System of State Statistics in the Russian Federation", the Order of the Government of the Russian Federation of July 18, 1994 No. 849 "On the Framework for Development and Presentation of the Balance of Payments of the Russian Federation".

Chapter 3 Institutional arrangements

3.1. *Scope.* This Chapter describes the need for purposes of institutional arrangements. It elaborates characteristics of the effective institutional arrangements and good practices in setting up such arrangements and the different country circumstances. The Chapter consists of the following three sections: The need and purposes of institutional arrangements (Section A), Characteristics of effective institutional arrangements (Section B) and Country practices (Section C).

A. The need and purposes of institutional arrangements

3.2. *The need in institutional engagements.* The statistical process resulting in production of official statistics, including SITS, requires the participation of numerous agencies and establishment of institutional arrangements. The institutional arrangements are generally understood as a set of agreements on the division of the responsibilities between the agencies involved in production and dissemination of data pertaining to a given statistical domain. The scope of such agreements may range from determining the complete process of the statistical production and dissemination to regulating certain parts of this process.

3.3. In the case of SITS the following agencies may be involved in the statistical process:

- i. National statistical office
- ii. Central bank
- iii. Ministry of trade/economy
- iv. Ministry of Finance/Tax authorities
- v. Immigration authorities
- vi. National Tourism Administration
- vii. Border protection agencies
- viii. Customs administration
- ix. Financial markets regulators
- x. Chamber of Commerce

3.4. *Purposes of institutional arrangements.* The purpose of all institutional arrangements is to ensure that official statistics meets the user needs, following international standards and are compiled and disseminated in the most efficient way. Meeting the user needs is especially important in new statistical domains like the compilation of Modes of Supply. This information is fundamental to trade in services negotiators and related policy analysis.

3.5. To ensure the efficiency of the statistical process the UN Statistical Commission systematically promotes the establishment of institutional arrangements as the prerequisite of an integrated approach to economic statistics.⁶⁸

3.6. It should be stressed that the Commission recognized that (a) it is neither possible nor desirable to propagate a single institutional approach towards integrated economic statistics as national statistical systems are different;² and that (b) there is no “right”

⁶⁸ Guidelines for IES, Chapter IV.

Box 3.1

An Integrated approach to economic statistics

Guidelines on integrated economic statistics identified the following features of an integrated approach:

- i. Common concepts, definitions and classifications. The use of harmonized terminology, definitions, concepts, standards and classifications is necessary in a national statistical system so that the various data collections are comparable and can be related to each other;
- ii. Business registers and frames. Business registers have a central role in integrated economic statistics in providing a central sampling frame for all business surveys.
- iii. Standardization of surveys. Integration should be comprehensive and encompass survey design, sample frame, and questionnaire design;
- iv. Administrative data. Administrative source data can be integrated for statistical purposes; concepts need to be matched with statistical records. The advantage of using administrative records and various government data is to promote a more efficient use of data collections, and reduce the burden of the respondents;
- v. Data editing, linkage and integration. Documentation of the editing process and transparency are indispensable to ensure that the resulting data can be used by various statistical domains and will be widely accepted and understood by users;
- vi. Dissemination and communication. Integration may facilitate providing user-friendly presentations of data, explanations of concepts, ensure consistent format across publications, electronic sources and websites.

institutional setting for integrating economic statistics, in the sense that the goal can be achieved in both centralized and decentralized statistical systems.

3.7. *Types of national statistical systems and institutional arrangements.* National statistical systems are organized on the basis of the statistical and other applicable national laws and regulations, which, to different degrees, specify the rights and responsibilities of the involved agencies thus defining main features of the country's statistical system. Usually, two main types of the national statistical system are differentiated - centralized and decentralized statistical system.

3.8. A national statistical service is referred to as centralized if the management and operations of the statistical programs are predominantly the responsibility of a single autonomous government agency. A national statistical service is commonly referred to as decentralized if the statistical programs are managed and operated under the authority of different institutions involving normally coordination by a single body.

3.9. Institutional arrangements should ideally complement the legal framework. Especially in cases where there are legal shortcomings for collecting or compiling data on the international supply of services institutional arrangements play an important role in the initiation of activities aiming to improve the existing legal framework.

3.10. This Guide recognizes that different institutional arrangements depending on the structure of a country's statistical system and other considerations can provide for qualitative SITS that follow internationally recognized methodological guidelines, utilize all available statistical sources in an efficient way and apply appropriate compilation

procedures. At the same time the guide provides good country practices that can help in setting up institutional arrangements in a most effective ways.

B. Characteristics of effective institutional arrangements

3.11. In view of the manifold economic interests that the compilation of Trade in Services relates to, a number of different national institutions may be concerned with it. Institutional arrangements should involve the key producers and users of SITS and can be set up in different ways depending on each country's needs, priorities and resources. They should contribute to establish appropriate channels of communication and mechanisms of coordination to ensure efficiency in statistical production. It should be taken into account that in some related statistical domains (e.g. in tourism statistics⁴) there may already exist institutional arrangements to build upon.

3.12. As part of the balance of payments, statistics on trade in services between residents and non-residents form the basis for monetary policy analysis as well as for the national accounts to describe a country's economic development. Therefore national statistical offices (NSOs) and Central Banks (NCBs), both as producers and users of data, largely share responsibilities for the collection and development of SITS.⁶⁹

3.13. Another important analytical aspect is the assessment of the competitiveness of countries and economic sectors for the conduct of economic policies and international trade negotiations based on GATS, which mostly regards countries Ministries of Economic Affairs and the Chambers of Commerce. Furthermore, the compilation of SITS in some areas coincides with other mandatory regulations. For example, Financial Market Authorities are typically responsible for banking and insurance supervision. Moreover, for foreign affiliate statistics (FATS), NSOs, NCBS, and other institutions may play very important roles both in collecting data and in the production and dissemination of these statistics, in accordance with the legal mandate in the statistics area assigned to each institution.

3.14. *The importance of close cooperation between NSOs and NCBs.* The success of the institutional arrangements, in most cases, depends on the existence of a clear division of the responsibilities and mutually beneficial cooperation between NSOs and NCBs, which have developed historically in countries and in different ways. In view of the growing need for information going hand in hand with rising cost consciousness, NSOs and NCBs should seek cooperation in focusing on their respective expertise, making use of existing data and looking after consistency in statistical production.

3.15. A further factor supplemental to the above is the expiration in many countries of the bank settlements systems used traditionally by the Central Banks as the main data source and which are being gradually replaced by enterprises surveys for the collection of many balance of payments data, including those for services. This leads to an ever more evident need for even more close cooperation and coordination between the Central Banks and the Statistics Offices, as the latter are normally conducting enterprise surveys and maintaining the business registers.

⁶⁹ It should be noticed that in some countries BOP statistics are produced by the Central Bank while in others they are produced by the National Statistical Office. Also arrangements exist where the two institutions share responsibilities in producing BOP statistics.

3.16. NSIs and NCBs should look for close cooperation with the Chamber of Commerce (or other representatives of a country's enterprise sector) to get support in producing high-quality data. On the one hand, stakeholders can inform enterprises about the importance of timely and accurate reporting and the use of electronic media. They can further support the communication between statistics producers and enterprises in survey design as well as in the interpretation of results. On the other hand, NSOs as well as NCBs can make data available for specific economic interests.

3.17. NCBs and Financial Market Authorities predominantly work together closely in fulfilling their respective tasks for financial market stability, sometimes they are even centralized in one single institution. Therefore, they normally cooperate closely in mutual assistance and no additional legal act is needed for the share of information. But besides institutional arrangements, NCBs as well as NSOs should ensure legal access to administrative data which allows them to make use of data on banking and insurance transactions which are collected for supervisory purposes.

3.18. *Characteristics of effective institutional arrangements:*

i. They should take account of the respective responsibilities of the institutions involved that cover all stages of the statistical process – from the identification of the user needs through the collection of raw data to data compilation, dissemination and evaluation of SITS.

ii. The rights and responsibilities of the institutions involved should be clearly defined to avoid misunderstandings, duplication of work or omission of significant elements of work.

iii. The terms of cooperation should be laid down in a legal document so that any changes of administrative procedures or statistical processes that could affect data compilation become an integral part and could be dealt with in advance.

iv. At the same time institutional arrangements should leave room for necessary flexibility in everyday statistics production.

v. Given the legal foundations of the cooperation one institution (the national statistical office, the central bank or a specially established interagency body) should have a clear mandate to monitor and coordinate various aspects of SITS production process as well as disseminate the data and keep in contact with international organisations and other users of SITS. vi. The main user groups are included in the institutional arrangements and participate in setting up the work programme.

3.19. *Terms of cooperation:*

i. Operationalisation of the relevant international statistical standards and good international practices;

ii. Development and implementation of SITS work programme including setting up of appropriate interagency data compilation arrangements;

iii. Establishment of close contact and regular consultations with the user community to guarantee the policy relevance of the data compiled and disseminated;

- iv. Promotion of an integrated approach to data compilation and an appropriate quality management to ensure that high quality SITS are made available to users under conditions of limited resources and ever-increasing user demands;
- v. Dissemination of SITS to users both domestically and internationally, and
- vi. Consultations with enterprises on questions concerning reconciliation and exchange of data.

3.20. *Good practices:*

- i. Adopting a strategic approach to planning that involves multi-level planning activities as an important tool for advancing the integration of economic statistics;
- ii. Implementing effective process management from the identification of data sources to the dissemination of output;
- iii. Following a code of practice as a clear set of rules that Institutions can refer to in statistics production;
- iv. Periodically review institutional arrangements and initiate necessary adjustments in order to keep them relevant in the light of evolving user needs and emerging new data sources;
- v. Establishing an advisory committee to assist in the development of data by supporting sound decision-making so that the interests of all stakeholders are taken into account;
- vi. Promoting communication between the staff of the different institutions involved to develop an understanding of the entire production process of SITS.

C. Country experiences

C.1. Country experience: Austria

3.21. *Agencies involved in institutional arrangements.* The following agencies participate in the institutional arrangements: the Central Bank, the National Statistical Office, and the Austrian Chamber of Commerce.

3.22. *Responsible agency.* In Austria, the Oesterreichische Nationalbank (OeNB) is legally responsible for compiling and disseminating Balance of Payments and related statistics (Foreign Exchange Act 2004 § 6 (1)). In 2006, the OeNB switched from a settlement system to direct reporting in the compilation of these statistics. In order to keep the costs of data compilation low – both in reporting for as well as producing statistics –, the OeNB opted for a close cooperation with Statistics Austria.

3.23. *Main features of the arrangements.* The two institutions agreed to put their future cooperation on a new and solid foundation and to sign a basic cooperation framework agreement to guide their cooperation in all fields of statistics related to the Austrian economy and based on international and/or national legislation. The mutual assignment of

tasks shall guarantee an efficient production of statistical data and analyses of the Austrian economy. It is therefore the basic principle of cooperation that both institutions concentrate on their respective expertise and data access which governs the determination of specific areas of activity. Thus, the OeNB focuses on compiling financial statistics and covering the financial sector while Statistics Austria focuses on compiling data on the real economy and covering nonfinancial sectors.

3.24. *Service contract between OeNB and Statistics Austria.* According to the basic agreement, compiling Trade in Services is defined as an area of “intensive cooperation” as the OeNB and Statistics Austria work jointly on a single statistical product in contrast to areas of “vital interest” where one party is responsible for data production while the other one is a main user of the data. The details of cooperation in Trade in Services statistics are laid down in an individual service contract as one institution provides input for a statistical product for which the other institution bears the legal obligation and responsibility. The contract mainly specifies (a) individual production stages, dates and interfaces, (b) classifications, revisions and quality measures, (c) access to non-published data, (d) utilization and reconciliation of existing registers and administrative data, (e) evaluation of new statistical, technical, financial and legal requirements as well as (f) coordination of the stance to be taken in national, EU- and international bodies.

3.25. *FATS:* In contrast to BOP and cross-border trade in services the NSO is responsible for compiling and disseminating FATS in Austria. Again these statistics are compiled in close cooperation with the NCB. The NCB has a service provider contract with the NSO. Concerning Inward FATS the NCB determines which enterprises are foreign controlled and the NSO collects the respective variables in the course of the structural business statistics. Concerning Outward FATS the respective variables are collected by the NCB as part of the survey on FDI. By applying this approach FATS can be compiled without any additional reporting burden for enterprises in Austria.

3.26. *Steering Committee.* Besides regular information sharing in the course of statistics production, specified in part in individual service contracts, the OeNB and Statistics Austria have set up a Committee consisting of at least two higher voting members of each institution. The committee meets at least once each quarter to monitor the joint activities and recommend enhancements where possible. It further initiates extensions and updates to the existing areas of cooperation including the prolongation and amendments to the basic cooperation framework agreement.

3.27. *The Chamber of Commerce.* With the introduction of direct reporting in compiling external statistics the OeNB also initiated close cooperation with the Austrian Chamber of Commerce to support contacts with the enterprise sector. The two institutions decided to enter into a basic cooperation framework agreement with the main focus on efficiently producing up-to-date and relevant statistical information. On the one hand, the OeNB aims at minimizing costs of statistics production on both sides – in the reporting enterprise as well as in the Central Bank – by making utmost use of administrative and register information. On the other hand, the OeNB disseminates easy accessible and detailed statistical information. The Chamber of Commerce assists the OeNB in fulfilling its tasks by supporting communication with enterprises in various ways, e.g. offering access to internal media and events and arguing for the importance of statistical information in general. At the same time the Chamber of Commerce fosters the use of administrative and existing statistical information to keep reporting obligations to a minimum and advocates the simplification of reports, e.g. by using electronic media.

C.2. Country experience: Malaysia

3.28. *Agencies involved in institutional arrangements.* The following agencies participate in the institutional arrangements: the Department of Statistics Malaysia (DOSM), Central Bank of Malaysia (BNM), Tourism Malaysia (TM). Besides these three agencies, there are 14 agencies that contribute to the data.

3.29. *Responsible agency.* All statistics collected and published by the Department of Statistics Malaysia (DOSM) are governed by the Statistics Act, 1965 (Revised 1989). Under the terms of this Act, DOSM has the independence to determine the coverage, contents, methodology and periodicity of data collection.

3.30. The DOSM is the main government and premier agency entrusted with the responsibility to collect, interpret and disseminate statistics for the purpose of formulating policies for national development planning and administration. Under this Act, the DOSM conducts surveys and censuses on a monthly, quarterly, or annually basis. The agreed lead responsibility for compiling SITS is the DOSM.

3.31. *Memorandums of understanding (MOUs)* were established between DOSM and both BNM and Tourism Malaysia. Central Bank of Malaysia (BNM) through its Statistical Services Department is responsible to compile cash BOP from International Transactions Reporting Systems (ITRS) and collection/processing of joint IIP survey data as well as external debt statistics. While Tourism Malaysia collects tourism related statistics to be used for BOP and SITS. Memorandums of understanding facilitate and improve cooperation between these agencies to compile SITS and BOP statistics.

3.32. *Inter-Agency Planning Group.* DOSM also chairs quarterly meetings of Inter-Agency Planning Group (IAPG) to brief members on the BOP data set prior to publication. The members include Economic Planning Unit (EPU), Treasury, BNM, Ministry of International Trade and Industry (MITI), Malaysia External Trade Development Corporation (MATRADE) and Malaysia Industrial Development Authority (MIDA). Technical meeting with BNM and other agencies are held as and when necessary.

3.33. *Working Group on Services Statistics.* The high-level committee structure of the Industrial Master Plan for Malaysia includes a Working Group on Services Statistics (WGSS) particularly to monitor the development of SITS.

3.34. Compilation of FATS and collection, compilation, and allocation of modes of supply is the responsibility of [...].

C.3. Country experience: Spain

3.35. *Agencies involved in institutional arrangements.* The following agencies participate in the institutional arrangements: the Bank of Spain, the National Institute of Statistics, the Institute of Tourism Studies, Spanish Tax Administration Agency (AEAT), the Ministry of the Economy and Competitiveness and the Ministry of Development.

3.36. *Responsible agency(s).* In Spain two bodies are responsible for SITS as follows: the Bank of Spain (BE) is the body responsible for the elaboration and dissemination of

the balance of payments. The National Institute of Statistics (INE) is entrusted with the production and dissemination of the FATS statistics.

3.37. *Bank of Spain.* Within services, the Travel item in the balance of payments is estimated by the Bank of Spain (BE) by means of a synthetic factorial model that gathers information from various surveys developed by the different institutions, including INE and the Institute of Tourism Studies (IET). Prominent among these surveys are those on tourist expenditures, cross-border tourist movements, overnight stays in hotels and non-hotel accommodations, etc.

3.38. *Cooperation agreement between INE, IET and BE* The Cooperation Agreement between INE, IET and BE was established on the exchange of the information needed to estimate Travel item. For its part, the Other Services item of the balance of payments is estimated by the Bank of Spain (BE) on the basis of a bank settlements system combined with direct reporting for some large declarants.

3.39. The future expiration, of the bank settlements system currently used by the Bank of Spain (BE) for estimating Other Services (set for 2014), led to an agreement with INE back in 2004 for the joint design of the so-termed International Trade in Services Survey (ITSS), a survey addressed to enterprises and other resident entities, for the purposes of making quarterly estimates of the Other Services item of the BoP. While INE and BE worked together on the questionnaire and its adjoining instructions, INE is responsible for the design of the sample, the fieldwork and the tasks subsequent to data collection (i.e., edition, imputation and grossing-up of the sampling data), always with the agreement of the Bank of Spain (BE) and its contribution of the main framework of the survey and of the reporters of foreign receipts and payments for services operations obtained from its bank settlements system.

3.40. *INE* and BE established this cooperation by way of a Gentleman's Agreement under which both parties undertook to abide by the agreements reached in the Minutes of the Working Group in order to conduct the survey, as well as to maintain the statistical confidentiality of the data exchanged. In 2005 the ITSS began to collect information on a compulsory basis, as the survey was included in the National Statistical Plan and the Annual Programme. The survey is under the responsibility of INE as the sole sponsoring and funding body, along with the technical cooperation from the Bank of Spain.

3.41. Despite the fact that there have been a number of formal draft cooperation agreements drawn up between INE and the Bank of Spain with regard to the ITSS, none have been finalised thus far. The main reason has possibly been that the ITSS micro-data, although forwarded to the Bank of Spain every quarter, have not yet been included in the services balance of payments. In spite of all the drawbacks, the Bank of Spain (BE) has preferred to go on using its bank settlements system to estimate the Other Services item in the BoP instead of the results of the ITSS, as the differences between the estimations obtained during these years by the survey and by its system have not been negligible. The Bank of Spain took this decision after making the appropriate crosschecks of the data collected by the two methods both at the macro- and micro-data level. For this reason, the two estimation procedures (the ITSS and the bank settlements system) have been living side by side with differences in constant values in the levels of the two series (more pronounced in imports), though with very similar trends. It is necessary to place it on record that the official data in gross figures for the Other Services item of the Spanish BoP are those obtained by the Bank of Spain through its system. The data obtained by the ITSS

are only partly disseminated by INE in the form of foreign trade in services indices and variation rates for a panel of enterprises of the ITSS sample, so as not to present conflicting figures that might confuse users.

3.42. Other possible reasons of a formal kind for delaying the signing of the agreement are: the need to bring the survey into line with the BPM6 and MSITS 2010 by 2014; inclusion in the ITSS of new items belonging to the balance of payments income and capital accounts, at the Bank of Spain's request; the future expiration of the Bank of Spain's bank settlements system, which already began in 2008 with the increase in the exemption threshold to €50,000 and which, as of 2014, will cease to collect the concept of the operation that yields a foreign receipt or a payment. This will force the Bank of Spain to use the data of the new ITSS as its sole basic statistical source in order to estimate the Other Services item of the BoP, and; the need of users for information to be collected in the ITSS regarding the service supply mode.

3.43. All of these factors make it inevitable that in the very near future the present INE-BE relationship based on the cooperative goodwill of the parties should be converted into a formal cooperation arrangement or agreement regarding ITSS, which, including the afore-mentioned innovations, should define the responsibilities of both institutions and the limits of their cooperation and data exchange.

3.44. *Cooperation Agreement between INE and the Spanish Tax Administration Agency.* INE has had a Cooperation Agreement with the Spanish Tax Administration Agency (AEAT) since 2004 in the area of the exchange of information for statistical and taxation purposes. AEAT is the administrative organization responsible for effective application of the state and excise tax system. Within the scope of international services trade, once a year AEAT forwards the micro-data of VAT records for international goods and services transactions to INE, with no possibility of differentiation. Furthermore, on account of the Community VAT legislation adopted by the EU, AEAT also sends INE the same information as above but confined solely to transactions within the EU, although differentiating in this case between goods and services transactions. This AEAT information has proved highly useful in the past for shaping the ITSS populations, and as of 2013 it will play a very important role in the identification of the operators carrying out services transactions of €50,000 or less with the EU, as this is the exemption threshold set in the Bank of Spain population of its bank settlements system. The information sent to INE observes tax secrecy, as under no circumstance is information supplied on the taxable bases or VAT declared by the operators, but only information in the form of the interval or range of values of these bases. Within this Agreement, every year, Customs, a department under AEAT, sends INE information in the form of micro-data of the INTRASTAT/EXTRASTAT operators who dispatch or bring in goods for processing or repair, and goods processed and repaired. This information is useful in the ITSS for identifying the population that undertakes the new processing and repair services included in the BPM6 and EBOPS 2010.

3.45. *Cooperation Agreement between INE and the Ministry of the Economy and Competitiveness.* For the elaboration of the OUTWARD FATS statistics, INE has a Cooperation Agreement with the Ministry of the Economy and Competitiveness under which every year the latter forwards micro-data of an administrative register called the Foreign Investments Register (FIR) to INE. In particular, the information sent to INE comes from the Annual Report on the Development of Foreign Investment, which has to be filed by every investor resident in Spain who makes investments in foreign companies

with net assets in excess of €1,502,530.27 and in which the investor's share in the capital or in the whole of the voting rights is of 10% or more. OUTWARD FATS statistics are compiled on the basis of statistical utilisation of the FIR, without any need to resort to a specific survey, as was done before. The INWARD FATS statistics are compiled from the business structural surveys conducted by INE in relation to the industrial, services and R+D sectors, to which add information from the Ministry of Development on the construction sector, information from the Ministry of the Economy and Competitiveness (DG for Insurance and Pension Funds) on the insurance sector, and Bank of Spain information on the financial sector. There are no *ad hoc* cooperation agreements with these administrative bodies for this exchange of information.

Part II Data Collection

Scope. Part II is focusing on data collection while Part III deals with data compilation. It is recognized that the boundary between data collection and data compilation is not always clearly defined. However, efforts were made to discuss in this part such main aspects of data collection as data sources, their advantages and shortcomings as well as various aspects of data collection process. Part II begins with an introductory Chapter 4 providing an overview of data sources used in SITS, which is followed by the description of registers and survey frames (Chapter 5) and continues with elaboration of enterprise and establishment surveys (Chapter 6), surveys of persons and households (Chapter 7), international transaction reporting system (Chapter 8), administrative records (Chapter 9), and other data sources (Chapter 10). Part II is concluded by a comparison of various data sources (Chapter 11).

Chapter 4 Introduction and overview of data sources within the modes of supply framework

4.1. *Scope.* This chapter serves as an introduction to the other chapters of Part II by briefly describing the main data sources used for SITS purposes. Part II covers the topics mentioned in the previous paragraph and is followed by Part III, which focuses on the compilation of the various data sources of Part II.

A. Data sources and data collection for resident/non-resident transactions

4.2. Possible data sources for SITS compilation and their definitions are listed below. Each data source is covered more in depth in each of the corresponding chapters cited.

- i. *Statistical business registers (chapter 5).* The statistical business register (SBR) is commonly understood as a register of economic entities active in the national economy. If various types of those entities and their characteristics are taken into consideration then the definition can be further elaborated.⁷⁰
- ii. *Survey (sampling) frame (chapter 5).* The survey frame (also called the sampling frame) is the statistical tool used to gain access to the target population that is to all economic entities which are intended to be surveyed. There are two types of frames: list frames and area frames. The frame is the backbone of the statistical system.⁷¹ It represents what must be regularly measured by the statistical system. Its coverage must be as complete as possible and reflect the organizational structure of all statistical units of the economy.
- iii. *Enterprise and Establishment Surveys (chapter 6).* These surveys can be one of the following types:
 - a. *Census:* Includes all members of the population;

⁷⁰ See Eurostat publication *Business registers: Recommendations manual* at: <http://unstats.un.org/unsd/EconStatKB/Attachment174.aspx>.

⁷¹ Guidelines on IES, paragraph 5.69.

- b. *Partial coverage collection survey*: Includes all enterprises above a certain threshold measured in terms of their dimensions (e.g. nominal capital) or other variables (e.g., significant cross-border activity);
 - c. *Random sample survey*: Includes enterprises that are preferably selected according to rigorous sampling procedures, with the results “grossed up” for the whole population;
 - d. *Stratified random sample*: groups population components according to the size of selected activity so that enterprises within different strata have different probabilities of selection. Usually, this is a combination of the partial coverage and random sample options but is more sophisticated and might produce a high level of coverage while remaining relatively cost-effective.
- iv. *Surveys of Persons and Households (chapter 7)*. Surveys of individuals or households, with household being defined as a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.⁷²
 - v. *International Transactions Reporting System (chapter 8)*. A system of collecting data of individual international settlements and/or transactions from banks, enterprises and individuals. In most countries that maintain ITRS, the reporting is mandatory and settlement data have been collected.
 - vi. *Administrative records (chapter 9)*. Administrative records are compiled for regulatory purposes or to support and document the administration of various government programmes (such as immigration regulation, social security benefits, education, and health).
 - vii. *Other data sources (chapter 10)*. These sources may include: credit card records, mobile phone records, records of business associations, financial statements of companies, reports of chambers of commerce, records of investment promotion agencies, private databases and data compiled by trading partners. Some of these sources are part of the body of information referred to as Big Data.

4.3. The international transaction reporting system was in the past the most prevailing data source of information on resident/non-resident transactions in services. It is being increasingly supplemented by other sources of data as SITS requires collection of information on a more detailed services categories and trading partners. Nevertheless, ITRS remains an important data source in many countries and it should be utilized and is, therefore, described in Chapter 8. However, this part begins with a description of registers and survey frames, which serve both as a source of information and the basis for the organization of various surveys. The recognition of the central role of statistical registers in the implementation of an integrated approach in SITS is a prerequisite for building a forward looking programme of data collection in this statistical domain. The use of administrative sources and other sources is an essential part of such programme as well as these sources can complement statistical surveys and/or provide information when, for example, surveys are not cost effective or difficult to organize.

⁷² SNA 2008, paragraph 24.12.

4.4. *Compiling SITS by partner country.* Partner country statistics provide information that enables users to develop greater insight into balance of payments aggregates. Governments use partner country statistics as a basis for policy formulation and bilateral negotiations. Use of partner country statistics facilitates bilateral reconciliations and, therefore, enhances the quality of balance of payments statistics.⁷³

4.5. In compiling partner country statistics, the compiler must decide on the principle of classification and the list of countries or country groupings to be shown. The country classification should be based on the country of residence of the provider and the recipient of the service.⁷⁴ The same country classification should be used across all sources of data collection, including the ITRS and enterprise surveys.

4.6. There are a number of external sources that may also provide information by partner country to which the compiler will have access. These sources include bilateral data compiled by compilers in other economies that represent the counterparts to transactions of residents of the compiling economy.⁷⁵

4.7. When other sources are used, the compiler should make every effort to ensure that partner country information is classified correctly. If it is not possible to obtain correctly classified data from the source, the compiler should, at least in significant cases, investigate alternative sources to obtain supplementary information.⁷⁶

B. Sources for modes of supply data

4.8. Mode of supply data for trade in services can be either collected through a direct reporting (surveys) or be estimated/modelled. In many cases a combination of the two approaches should be used to obtain the required aggregates.

4.9. For compilers using an International Transaction Reporting System (ITRS), modelling the relevant mode of supply may be the only option. Data on Mode 3 (commercial presence) will need to be collected in addition to existing data on resident/non-resident services trade as this mode of services supply falls outside the scope of service transactions measured under the Balance of Payments framework.

4.10. Although modes of supply can be collected directly through surveys for some service types, other service types (such as travel services, which are mode 2) can be estimated instead. Household surveys can also be used to collect modes of supply data, especially with respect to mode 4. However, values calculated from household surveys need to have sufficient metadata accompanying them as there are likely to be large sample errors associated with such numbers. They should be used more as indicators rather than as an accurate measure of the value of mode 4 services trade. Metadata is very important when it comes to making comparisons across countries – users should know whether the data they are looking at comes from surveys, or has been estimated (and how it has been estimated).

4.11. If services data is collected using surveys the compiler can add additional questions to these surveys. These questions will ask respondents to specify the mode in which the service

⁷³ BPM6 Compilation Guide, appendix 5, A5.2-A5.3.

⁷⁴ Ibid., A5.3.

⁷⁵ Ibid., A5.21.

⁷⁶ Ibid., A5.23.

transaction was undertaken for each service type. Modes of supply data are unlikely to change significantly in the short-term, so these extra questions may not need to be included each time the survey is run.

4.12. The main advantage of using surveys to collect modes of supply is that the compiler has a significant control over the data that can be obtained. Surveys can also be tailored to answer policy questions. However, this needs to be weighed against other considerations such as cost, respondent burden, and difficulty in implementing the survey. These will vary from country to country. Surveying relies on respondents understanding the concepts so that they will report correctly. A detailed survey guide will be helpful in this regard. Paper-based surveys may end up looking cluttered without intelligent survey design.

Chapter 5 Statistical business registers and survey frames

5.1. *Scope.* A Statistical Business Register (SBR) is commonly understood as a register of economic entities active in the national economy. As such, they can provide a central sampling frame for a variety of business surveys, play a central role in the collection of economic statistics, and form the backbone for integrating such data for deriving more detailed or combined indicators. This chapter summarizes the central concepts and good practices for the establishment and maintenance of the business registers, allowing for differences in local circumstances. It focuses in particular on how business registers and survey frames can be used in the context of data collection of resident/non-resident trade in services, FATS and modes of supply. This chapter consists of four main parts. After describing the purpose of SBRs and survey frames, and the definitions of the main concepts involved (Section A), the chapter summarizes the key recommendations for creating and maintaining a statistical business register (Section B), after which it elaborates the minimum requirements for, and use of, the SBR for collecting SITS data (Section C). Section D summarized the main recommendations from this chapter while the final section (Section E) gives various country examples in using business registers for collecting SITS data.

A. Statistical Business Registers

A.1. Introduction

5.2. This Compilers Guide was written at a time, when a lot of attention was devoted to the further development of international guidelines for establishing and maintaining an SBR. In September 2012, the African Development Bank published the *Guidelines for Building Statistical Business Registers in Africa*⁷⁷ with the subtitle “Laying the foundation for the harmonization of economic statistics programs” (in Africa). The introductory part of this chapter uses materials of that publication. At about the same time a UNECE Task Force on Guidelines for Statistical Business Registers⁷⁸ was formed with the objective of delivering a handbook by the end of 2014. Activities were also underway in Latin America within the context of the Statistical Conference of the Americas, which concluded with a meeting in May 2013 in Mexico City.

5.3. The work of the UNECE Task Force was closely linked to the work of the Wiesbaden group on Business Registers, which is a well-established forum and subsidiary of the UN Statistical Commission, in which business registers had been discussed since the early nineties. The handbook being developed by this Task Force was meant as practical advice on the establishment and maintenance of a SBR. Some parts of the draft chapters of that handbook are used here, notably on the roles of a SBR, its creation and maintenance, and the possible data sources. For the purpose of this Guide we will focus mainly on the role of the SBR as a central Sample Frame.

5.4. It is recommended that countries that have or intend to create a business register, aim at maintaining one multipurpose statistical business register instead of several business registers. A shared use within the national statistical system can reduce the burden of maintenance of the business register; the updates shall be done only once and can be used by all statistical authorities. With a shared statistical register the business populations of the

⁷⁷ See link on UNSD website.

⁷⁸ <http://staging.unece.org/stat/home/areas-of-work/statsarchiveact02e/statsarchive0210be/task-force-business-registers.html>.

various statistical surveys will be identical. The same statistical units will be applied by all statistical data collections based on the business register. Moreover all statistical surveys launched by different national statistical authorities can be coordinated. Common survey coordination also supports data providers to monitor their obligations related to the statistical surveys. An integrated and high-quality business register helps to improve the efficiency of the national statistical system.

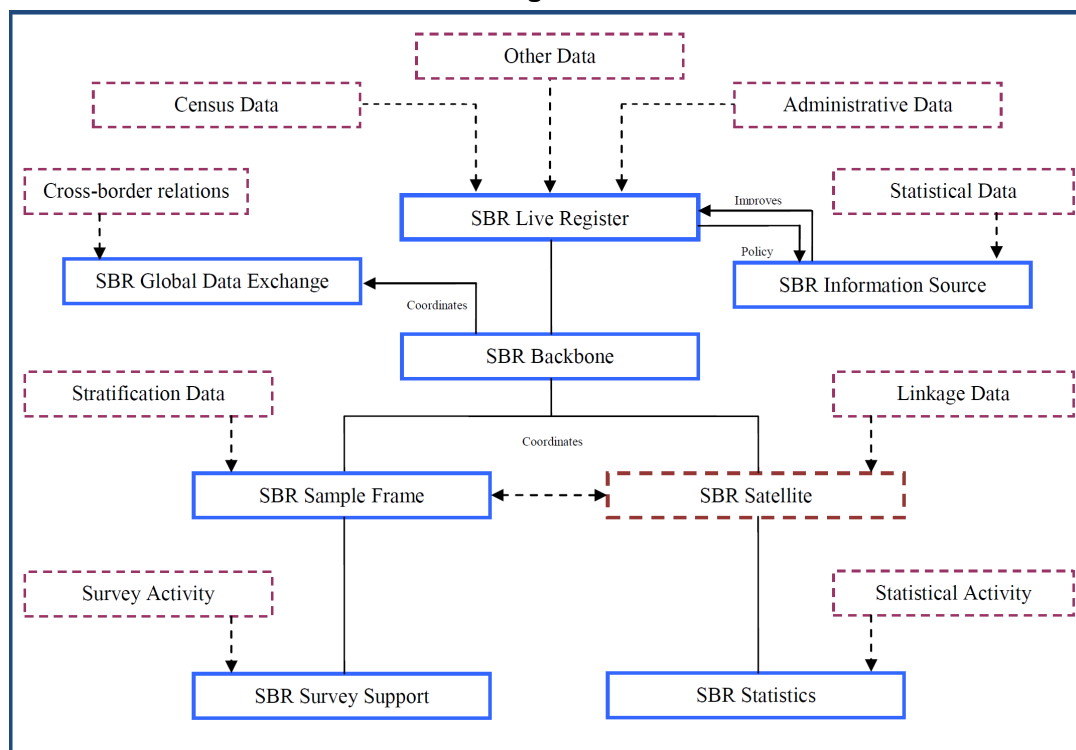
5.5. The UN Statistical Commission recommended SNA 2008 for setting up data collection in all economic areas. As the SITS conceptual framework is grounded in SNA 2008, the SNA 2008 definitions of the statistical units should also be used for SITS purposes.

A.2. *Roles of the SBR*

5.6. An economic statistics program comprises basically three components, of which the SBR plays a major role in the first and (typically) economically most important component, namely

- i. a suite of business surveys based on frames provided by the SBR and covering the formal sector of the economy;
- ii. an occasional household-based survey of household enterprises not included in the SBR and constituting the informal sector; and
- iii. a suite of surveys of farms and small holdings not included in the formal or informal sectors.

Figure 5.1
The roles of the Statistical Business Register



5.7. The SBR must be seen in context. It is a means to an end rather than an end in itself. As such, it is a component – a vital component, but only one component – in an integrated program of economic surveys. The ultimate goal is the production of comprehensive, coherent, and well-used economic statistics. Figure 5.1 and Table 5.1 describe the various roles of the SBR. Statistical units in economic statistics are the reporting units that describe populations of companies with ‘similar’ production- of financial processes. An important role of the SBR is to maintain and keep track of the changes of statistical units and their characteristics due to real life events. This is a continuous process in which constant modifications of a collection of statistical units occur in time and space. The degree of modifications depends on the update strategy of the SBR. In this respect the SBR can be considered as a kind of ‘Live Register’ in which the composition of units constantly changes over time.

5.8. In the Live Register statistical units are derived and the decision is made whether a statistical unit keeps its identity in the SBR, is deleted from the SBR or is registered as a new unit. Monitoring the continuity of statistical units is important in the maintenance of the SBR. In the Live Register the delineation of the enterprise and the maintenance strategy are the most important processes that determine the quality and the usability of SBR populations in business statistics. Further details on the roles can be found in the UNECE handbook.

A.3. The SBR as the central sample frame

5.9. The primary benefits of maintaining one sample frame are better coverage, harmonisation of surveys, integration of survey data, reduction of costs, prevention of double counting of statistical information, and above all better quality and more coherence in official statistics. Of course, this benefits can only be realized when one central register is used to derive a sample frame. In this respect the backbone is the best possible population to select a frame from which we can draw a sample from. The coordinated variables (e.g. ISIC, size class and location) are already included in the backbone.

5.10. There are three reasons why construction and use of an SBR as the central sample frame is desirable. First, if survey frames are independently created and maintained, there is no means of guaranteeing that they are harmonized. As a result there may be unintentional duplication and/or omission of activities. Second, an SBR enables practical application of standard statistical units and their classifications, which is a crucial requirement for survey outputs to be integrated. Third, it is more efficient for a single organizational unit to maintain the SBR as a source of frames for all business surveys than for each survey team to be independently maintaining its own frame.

5.11. An up-to-date survey frame is required for each repetition of a regularly conducted survey. It is more efficient to maintain a frame so that it can support the sequence of repetitions of a survey than it is to create the frame afresh with each repetition. This is particularly true in the case of sub-annual surveys, where overlap of sampled units from period to period is essential. Survey frame maintenance is best achieved through the development of a single statistical business register (SBR) and its use as the source of frames for all business surveys.

Table 5.1
The roles of the Statistical Business Register

	Role	Goal	Example
1	SBR Live Register	The gateway between (different) source(s) and the statistical units	Floating administrative units
2	SBR Backbone	Coordinate populations of statistical and administrative units in space and time.	Backbone for Business Statistics (the Netherlands)
3	SBR Sample frame	Provide set of administrative units valid for the reference period with all attributes to draw a sample.	Live register and Target area
4	SBR Survey support	Control administrative burden and monitor survey response	Survey holiday The SBR and the enforcement information (the Netherlands)
5	SBR Statistics	Statistical information based on registers.	Business Demography Statistics (Europe)
6	SBR Global data exchange	Coherence in global statistics	European Statistical System Network (ESSnet); Euro Group Register, EGR (Europe)
7	SBR Information source	Support market investigation performance	Use of GIS (Mexico)

5.12. The SBR serves as the basis for grossing up the results from these surveys to produce estimates for the entire business population, and is the main source for data on business populations and their demography. The SBR should preferably cover as much national economic activity as possible. However, the high cost-benefit ratio involved in covering the smallest units means that some sort of cut-off is usually applied in practice. In addition to its role as sampling frame, a high-quality⁷⁹ SBR can also improve the efficiency of the national statistical system by coordinating and spreading the samples of the various statistical surveys, which should help reduce the response burden, and improve coverage and congruence of the survey results. Finally, a comprehensive and up-to-date SBR has a central role in achieving integration of economic statistics, and is essential for the full co-ordination of source data that use the same basic information about business units⁸⁰.

A.4. Characteristics of a SBR

5.13. The SBR typically list the *economic entities* that are of interest for economic statistics. Economic entities have numerous characteristics, but some of the most important ones include their classification by (a) institutional sector (as defined in SNA 2008), (b) activity and (c) location. Most countries provide laws that enable economic entities to define

⁷⁹ Overall quality is not easy to measure, though several of its specific aspects of it can be used as indicators, e.g. coverage, accuracy of the data held, frequency of updates and consistency of processes (see also chapter 20).

⁸⁰ Guidelines on IES, paragraph 3.29.

and register themselves as *legal entities* - entities that are recognized by law or society, independently of the persons or institutions that own them. A legal entity can own goods or assets, incur liabilities and enter into contracts. The legal entity (or unit) always forms, either by itself or sometimes in combination with other legal units, the basis for the *statistical unit*⁸¹. The statistical unit is an entity about which information is sought and for which statistics are ultimately compiled. It is the unit at the basis of statistical aggregates and to which tabulated data refer.

5.14. The SNA 2008 provides the standard definitions of the statistical units. The SNA 2008 is recommended by the UN Statistical Commission for use in setting up data collection in all economic areas. To facilitate this, UNSD has developed a manual explaining the various types of statistical units.⁸² As the SITS conceptual framework is grounded in SNA 2008, the SNA 2008 definitions of the statistical units should be used for SITS purposes as well. Box 5.1 lists and briefly defines the concept of statistical unit and the main types of statistical units.

Box 5.1

Different types of statistical units

The *institutional unit* is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities. Two main types of units may qualify as institutional units: persons or groups of persons in the form of households, and legal or social entities.

An *enterprise* is an institutional unit in its capacity as a producer of goods and services. An enterprise is an economic transactor with autonomy in respect of financial and investment decision-making, as well as authority and responsibility for allocating resources for the production of goods and services. Enterprises under the control of the same owner form an *enterprise group* to achieve economic advantages such as economies of scale, control of a wider market and an increase in domestic productivity through more effective business management.

An *establishment* is an enterprise or part of an enterprise that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added. Note that the SNA 2008 also defines industries in terms of establishments.

There are two *other statistical units* that are often referred to in data sources relevant for SITS: A *kind-of-activity unit* is an enterprise or part of an enterprise that engages in only one kind of productive activity or in which the principal productive activity accounts for most of the value added; and a *local unit* which is defined as an enterprise or a part of an enterprise (for example, a workshop, factory, warehouse, office, mine or depot) which engages in productive activity at or from one location.

Source: based on *Statistical Units* (2007), UNSD, New York.
<http://unstats.un.org/unsd/isdts/docs/StatisticalUnits.pdf>.

5.15. The statistical units used in SBR should be described by three sets of variables and characteristics:

- i. *Identifier variables*: including for example identity number, name, address (including postcode), telephone and fax numbers, electronic mail address and information to permit electronic collection of data, value added tax (VAT)

⁸¹ IRIS 2008, paragraphs 71- 72.

⁸² http://unstats.un.org/unsd/industry/docs/stat_2008_6.pdf.

registration number or other administrative identity numbers such as for example EORI.

ii. *Economic/stratification characteristics:* These characteristics are related to activity classification (principle and secondary), size (e.g. number of persons employed, turnover, value added) and location variables .e.g. country of global decision centre (UCI), countries where enterprises or local units are located, information on whether or not the unit is engaged in international trade.

iii. *Demographic characteristics:* recording calendar dates for important events like commencement of activities, termination of activities, and joining or ceasing to be part of an enterprise (group) permit an initial demographic analysis of the population of enterprises, local units and enterprise groups.

A.5. *Creation and maintenance of a statistical business register*

5.16. The environmental circumstances and factors within which countries will build their SBRs can clearly be vastly different. The legal frameworks for acquiring data, as well as the access to human, financial and technical resources will ultimately determine how countries can proceed. There are however some key themes that recur, including:

i. the need to build effective partnerships with data suppliers, funding providers and the users of the SBR by first making sure that the critical role of the SBR in delivering a coherent and reliable national economic statistics program is well recognized, and second by putting in place governance structures and partner engagement mechanisms that are robust;

ii. the need to manage the implementation and operation of the SBR in a manner that allows it to focus on and achieve its mission-critical purpose, which is to identify the population of businesses of a country so that they can be surveyed to acquire useful economic data. There are other secondary yet highly desirable roles that an SBR can fulfil, such as acting as a data collection management and tracking tool. The original design and implementation plan should allow for adding in these components, but only once the SBR has fully matured in its role as a quality statistical frame;

iii. generally speaking, the approach should be to maintain simplicity to the extent possible. Conceptual and technical complexities should be added in only when they serve a practical purpose, and they should never detract the SBR from meeting its larger goals.

5.17. The primary function of a SBR is as a central frame for economic surveys across programs. This enables conceptual coherence, and creates the basis for an integrated economic statistics program. It is also the foundational purpose of the SBR that should be the focus at the outset of development. The longer-term vision, however, should from the beginning also allow for the adding in of other features and components that will further enhance the SBR's value-added. The secondary outputs to be potentially developed after the SBR has become operational as a survey frame are:

- i. A source of register-based statistics. This requires seamless integration of administrative data, heavy quality assurance, raw data treatment and programming resources;
- ii. A module to track respondents and response burden. This module requires human IT resources to develop and maintain server and database resources. This module may or may not be efficient or necessary when using the SBR in the early stages, since population coverage remains limited and resources are directed towards the economic entities that have the largest impact;
- iii. A receptacle for tracking survey collection outcomes and response rates, etc.;
- iv. A ‘survey feedback’ mechanism that facilitates the update of frame information based on information, which is the information pertaining to frame-based characteristics such as industry classifications

5.18. The IT professionals who will architect the data structures and larger system design will in particular benefit from having the longer-term vision clearly pre-defined, thereby facilitating the addition of these modules as the SBR evolves. To re-iterate, the SBR must first and foremost be a solidly reliable listing of businesses from which statistical surveys can accurately measure the economic trends of a country. Creating it will be a challenging task, as will keeping it up to date once it is in use. The challenges entailed by the creation and on-going maintenance will be greatly facilitated by adhering to the following principles.

5.19. *Do not over-extend resources in the early stages by trying to cover all types of business.* While a highly developed SBR may cover a vast amount of the economic population, a new SBR must focus on covering the population that is both most important and that can be most reliably captured and reflected. The need to maximize limited human and technological resources, and to use initial funding efficiently, should limit the scope of the initial SBR population. Reflecting the informal economy, which is highly diversified and for which no administrative data exist, cannot be a focus of the SBR development project. Typically, for the macroeconomic indicators that are the driving objective for the statistical programs to be served, acceptable margins of statistical error can be obtained by excluding the numerous businesses that are at the smallest end of the size spectrum. Including the ‘micro’ businesses would add large volumes of records to be maintained, while adding only very small increments to the figures (such as GDP) being produced. This is not to say that having these businesses will not be useful, as they can inform important policy analysis pertaining to business formation strategies, small-business financing and other micro-economic issues. This again is a desirable feature that is worth adding, but only once the core objective of adequately supporting the key indicators produce by the national accounts has been met.

5.20. *Plan for a system that provides both live and snapshot versions of the register.* It will likely be necessary to have two instances of the SBR: (1) a ‘live’ version, which can be used to receive updates so that the updating of records entailed by on-going frame maintenance activities can be instantly recorded, and (2) a ‘snapshot’ version produced from the live instance on a monthly, quarterly or annual basis that survey programs, which can be used to create their particular sample files. The snapshot also provides a basis for period-to-period comparison of frame quality.

A.6. *Governance of a SBR*

5.21. Governance and organizational structure of an SBR within the economic and statistical system is important — not only for developing the program, but more so for its ongoing maintenance and support for users. The SBR should be, where possible, an independent entity with a dedicated manager. The manager's unit should assume the following responsibilities:

- i. define and document all concepts, in line with international, national, and local statistical bureau standards;
- ii. plan and direct the development of SBR system processes and functionalities;
- iii. plan and implement a quality assurance program for the SBR with the goal of
 - a. assessing the quality and ensuring the frame's continued integrity
 - b. defining and producing quality measures for the SBR
 - c. identifying system improvements, or recommending adjustments to the training program or procedures, if required;
- iv. profile businesses to delineate those that are larger and more complex, to properly represent their production output;
- v. ensure that businesses are classified within the proper standard industry classification;
- vi. assign or derive statistical indicators, or create statistical units, from the administrative base register to create a complete and unduplicated SBR aligned with the needs of the System of National Accounts;
- vii. validate new development strategies, specifications and procedures;
- viii. develop and deliver the courses and material to educate these SBR users: profilers, frame specialists, analysts, coders, survey divisions and collection areas (training could follow a certification process so that those wishing to access the register must first complete the appropriate level of instruction);
- ix. support those who use the SBR data, which includes evaluating their needs for their surveys or analysis;
- x. provide direction and support on legal aspects related to the frame such as access and dissemination;
- xi. maintain a dedicated group tasked with producing files for users and processing all files related to updating the frame;

5.22. The creation and maintenance of a unified comprehensive statistical business register is a long-term objective and a challenging task⁸³, and it is recognized that resources devoted to that purpose vary between countries. In spite of this, a number of common issues remain that many national statistical office may encounter in assessing the suitability of a business

⁸³ Guidelines on IES, paragraph 5.67.

register for SITS purposes.⁸⁴ For instance, a legal framework should be in place to allow access and use of these administrative records for the purpose of the business register. In the maintenance process as many administrative sources as possible should be used to update the register, including, for example the administrative company register, register of sole proprietors, register of government units, register of non-profit units, tax information e.g. corporate tax, value added tax and social security information.

5.23. Ideally, there should be a unit in the national statistical office responsible for developing and maintaining the statistical business register. Decentralized systems may want to begin by developing a system for reconciling the more significant inconsistencies in the data produced by multiple business registers, to improve the accuracy and consistency of the data through more consistent classification of key enterprises and the elimination of overlaps and gaps in coverage.

A.7. Maintenance of a SBR

5.24. The business register needs to be continuously updated (depending on the data sources) to be able to give a situation picture which is as up to date as possible. Trade is normally shifting very rapidly, which means that old data may soon become useless. The register should be updated at least annually to record unit creations and deletions, as well as changes in address and stratification variables.

5.25. New enterprises should be recorded in the business register as soon as information about them is available, preferably before they start trading, so that information about investment in new buildings and plant can be collected. Changes to the data necessary for the conduct of surveys, such as addresses of reporting units, should obviously be reflected in the register as quickly as possible.⁸⁵

B. Characteristics and minimal requirements for a statistical business register for use in SITS

B.1. A Satellite Register for Trade in Services

5.26. If we use the units available in the SBR to link observations/registers from other sources, then the combined result can be called a satellite of the SBR. The difference with the sample frame is that in a satellite all units in the underlying population are used to link information to. The linkage of data from an external source to the SBR gives us the possibility to analyse the over- and under coverage of the population. This helps the statistician to determine the target population when indicators are published.

5.27. The responsibility for and control of a satellite are separated from the SBR and usually take place in distinctive environments. This could adverse the coordinating role of the SBR, but the big advantage is that a satellite system can store much more additional information and can be managed without interfering the SBR-system. Satellites can for instance support functional statistics, such as the International Trade Statistics or support cooperation with central banks. In these cases many anomalies can be avoided because the

⁸⁴ Compilers interested in learning more about the detailed aspects involved in the establishment of an effective SBR should consult the Eurostat publication *Business registers: Recommendations manual. Business registers: Recommendations Manual*. <http://unstats.un.org/unsd/EconStatKB/Attachment174.aspx>.

⁸⁵ Eurostat publication *Business registers: Recommendations Manual*, paragraph 4.4, page 23.

difficult integration process within the SBR system is avoided. External trade in services is in principle a possible activity for all units in an economy. Drawing efficient samples requires including those enterprises with international trade in service transactions and excluding those which do not trade in services, therefore, trimming down the population to a usable size. In practice, it is useful to have tailored-made satellite register for trade in services (TIS-R).

B.2. Objectives of TIS-R

5.28. The objectives of TIS-R can be described as follows:

- i. The SITS register needs to enumerate all the resident economic units having had in the recent past international transactions in services. Ideally the services sub-register should enable an immediate discrimination of its population by major kinds of services and distinguish the population of services exporters from that of importers insofar as these populations may have significantly different features.
- ii. The TIS register needs additional indicators providing information on international transactions (generally not included in SBR). The SBR is a necessary but not a sufficient source to determine the TIS population.
- iii. The selection of the population of enterprises due to report data for use in SITS will be an extract of this register. It generally includes all big players and SMEs participating to a sample survey. So we get three populations of enterprises: the population of SBR, the population of TIS and the part of the population of TIS which is surveyed.

5.29. *Variables.* Various economic information like turnover, economic activity, number of employees, balance sheet variables, foreign trade data and data on foreign ownership are necessary auxiliary variables to carry-out the selection, the stratification of enterprises, sampling and estimation.

Table 5.2
Variables, purposes and possible sources

Variables	Purpose	Possible sources
Identification number	All items	General Business Register (GBR)
Economic sector	TIS+FATS	GBR
Number of employees	TIS+FATS	GBR, administrative sources, annex balance sheet
Total turnover	TIS+FATS	Administrative sources (VAT), companies' accounts
Exports and imports of goods	TIS+FATS	Settlements, VAT, trade in goods register
Exports and imports of services	TIS+FATS	Settlements, VAT, survey on trade in services
Total international settlements	All items	Resident banks settlements
Foreign ownership indicator	All items	GBR, private databases, stock exchange
Group indicator	FDI, FATS	GBR, private databases, stock exchange

5.30. *Sources.* The different sources used to build and update the TIS register must be considered under two aspects: the identification of the population and the variables that should be used to identify the population and to select the enterprises to be surveyed (see the diagram above). Here are some potential sources to be carefully tested:

- i. *The general SBR* lists the businesses active in the country, whatever their activity (domestic and/or international). It may contain interesting information for building and updating the TIS register: identification variables, stratification variables relating to the activity and size of the enterprises, demographic variables and relationships variables (links between units).
- ii. *The settlements and international payments databases* exist in a majority of countries and contain the detail that can be derived from an ITRS. From these we can list the resident units carrying out international payments through accounts held in resident banks with an item breakdown (including trade in services).
- iii. *The trade registers* include a list of resident operators involved in international trade in goods. Generally a link can be established between trade in goods and trade in services (through merchandise transportation for instance).
- iv. *VAT registers* are used as a major source for updating the other registers existing in the country. The basic information in the VAT register includes in general the variables like turnover, employment, main activity and total goods and services exports and imports which may be useful for TIS registers.
- v. *Other sources* are the register of partial direct reporting companies, FDI register, balance sheet information, specific registers available from trade associations or regulatory bodies (insurance companies, postal and telecommunication operators, trusts, securities dealers, press and other media).

C. Country experiences

5.31. This section contains descriptions of four country cases, each of which represents specific practice adopted by a given country. The USA experience illustrates how business register can be used to identify firms trading in services. The experience of Italy shows that a persistent difficulty with the access to general statistical register and other problems with obtaining a necessary survey frame may lead to a decision to create a specific, statistical business register to support the compilation system for the external sector accounts and how it can be done. The case of Spain demonstrates the complexity of issues which have to be overcome to build a tailor-made TIS register when the general statistical business register traditionally used as the statistical frame for almost all business surveys does not contain variables needed for the direct identification of exporters and importers of services. The Uruguay experience proves that sustained efforts can result in developing a register which can provide a basis for SITS compilation under the circumstances the developing countries usually have to face.

C.1. Country experience: the United States

5.32. The U.S. Bureau of Economic Analysis (BEA) uses information from a register maintained by the U.S. Census Bureau as a primary source for identifying companies engaged in cross-border trade in services. The Census Bureau's Company Organization Survey (COS), which is also known as the Report of Organization Survey, is designed to obtain current organization and operating information on multi-establishment firms in order to maintain the U.S. Business Register. The United States Code, Title 13, authorizes this survey and provides for mandatory responses. The survey covers all companies with payroll, and their establishments, except companies engaged exclusively in agricultural production.

5.33. Most recently in 2011, the U.S. Census Bureau provided BEA with a list of companies from the 2007 Company Organization Survey. This list included companies that responded positively to a question that asked if they had exported services in 2007. In addition, the list included manufacturing companies that had responded positively to a question that asked if they had purchased services; the question did not differentiate between services purchased domestically and imported services. The Census Bureau provided BEA with a list of more than 13,000 companies, 9,200 of which were manufacturing companies.

5.34. In 2012 BEA used this list from the U.S. Census Bureau to supplement the existing BEA mailing list (register) for the 2011 BE-120, Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons. Due to concerns about survey respondent and data processing burden, BEA used a two-step process to add 2,000 of the 13,000 companies to its existing register for this benchmark survey. First, BEA eliminated companies that were already included in BEA's register. BEA then randomly selected 1,500 companies from the remaining list and 500 companies from the list of manufacturing companies that purchased services to supplement BEA's register. These potential respondents were assigned control numbers to enable BEA to track the response rate for these companies. If the response rate is high and the amounts reported are significant, then BEA could consider further expanding its register in the future.

5.35. In addition to using this list from the Census Bureau, BEA staff routinely identifies new companies engaged in trade in services by using information from its foreign direct investment survey register, by purchasing mailing lists from trade associations or other private organizations, and by reviewing trade periodicals and other publicly available information.

C.2. Country experience: Italy

5.36. In the period 2007-2011, the Bank of Italy started a project of renovation of its BOP system. It required around five years to be completed and the investment of significant resources, inside and, above all, outside the Bank, by the population of respondents. A central role in the new system is played by the business register, specifically devoted to BOP purposes, developed by the Bank of Italy. The business register is in particular an essential tool for "direct reporting", a multipurpose set of surveys, covering different parts of the BOP and the IIP.

5.37. Generally, a statistical register of enterprises is maintained by the national statistical institute or by another government agency⁸⁶, as the "national business register", where the statistical units are well defined and clearly identified. Therefore, the use of such a register helps to avoid very common and serious biases in the identification of population: *under-coverage*, when some enterprises are excluded from the population list, and *duplication* of the units, which may occur when firms are not well identified by a unique key.

5.38. The use of a unique "national business register" to be used for the surveys in the different statistical domains is an ideal approach. However, for the time being, in Italy, even in a context of very intense statistical co-operation between the national statistical institute (ISTAT) and the central bank, the Bank of Italy cannot access the former institution's business register, because of legislative constraints.⁸⁷

⁸⁶ IMF BPM6 Compilation Guide, Chapter 2.

⁸⁷ At the time of writing of this paragraph, the two institutions are working together to remove the mentioned legal obstacles.

5.39. The Bank of Italy has necessarily had to create its own, BOP-specific, statistical business register to support the compilation system for the external sector accounts. The coverage of the population of Bank of Italy's register is rather good, comparable with that of the ISTAT one; this is not surprising, as both registers are mainly derived from the same original source, represented by the administrative data of the country's Chamber of Commerce. The Bank of Italy register collects information from the entire corporate sector (about 1.5 million units), with the exception of the individual firms,⁸⁸ that in Italy are about 3 million. The coverage of the register in terms of turnover is near 90 per cent, and this percentage increases if we consider only cross-border operations, due to the positive correlation between firm's dimension and their propensity to internationalization.⁸⁹

5.40. Given the rather tight deadline for the production of BOP data (especially as regards the monthly figures, to be reported to the European Central Bank - at T+45 calendar days - for the compilation of the euro-zone BOP), timeliness is a particularly critical factor for the Bank of Italy's business register. The register is updated daily, with an online data transmission that includes the changes in the data base. This allows to timely account for changes in the population of firms that in some cases may significantly affect the external sector statistics, especially as regards Foreign Direct Investments. Another important aspect is that an always up-to-date business register also contributes to the smooth running of back office activities (help desk, formal communications to enterprises, sanction procedures, etc.).

5.41. An additional feature of the register is that enterprises which engaged in cross-border transactions are specifically flagged; to this end, quarterly bank reports on firms that carried out cross-border settlements are used. This allows improving significantly the efficiency of sampling selection. In details, the business register contains the following information on individual enterprises:

- i. identification keys (fiscal and Chamber of Commerce codes);
- ii. structural information: name, address, NACE code, certified e-mail address;
- iii. balance sheet data: turnover and total assets;
- iv. presence / absence of cross-border transactions: information collected through the banking system (see above);⁹⁰
- v. FDI data (inward and outward): value of the participation, share of total equity, partner country.⁹¹

5.42. The production process of the Bank of Italy's business register and the derived population list for direct reporting purposes is shown in figure 5.2. The register is built

⁸⁸ Small one-man-owned firms.

⁸⁹ In terms of number of enterprises the coverage of the BoI business register is about 33 per cent. The apparently low percentage is explained by the fact that the numerous "individual firms" are excluded. In other words, the true population frame of the register is actually the corporate sector, for which the coverage is complete (100 per cent). In any case the cross-border transactions of individual firms are covered through tax authority's data; their cross-border transactions represent about 5% of the total in the "other services" aggregate.

⁹⁰ This information is referred to all kind of cross-border transactions: sales and purchases of good and services and also financial operations.

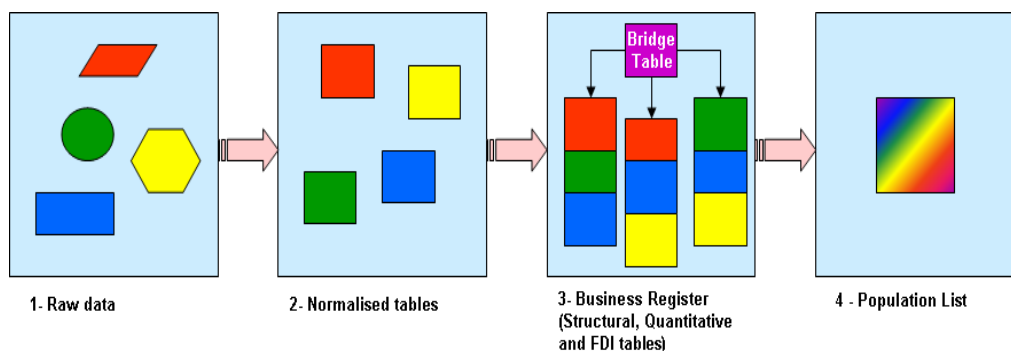
⁹¹ The "share of total equity" obviously also allows to detect the presence of "foreign control" (more than 50% of the capital), which may be used for the purposes of FATS statistics. However, the BoI is not responsible for the latter statistics, which are produced by ISTAT.

aggregating the “raw data” originating from different data sources, mostly received by external data providers, which are subsequently converted into “normalised” tables. The latter are integrated forming a relational database, through a “bridge table” which contains all the identification keys used by the various data providers. The business register relational database consists of three tables: a *structural data table*, which contains the firms’ name, address, etc., a *quantitative data table*, with balance sheet data and the flag about the presence of cross-border payments, and an *FDI table*, concerning enterprise ownership features.

5.43. The final *population list* used for direct reporting purposes is extracted from the business register according to well defined criteria. In particular, when the information about a specific set of variables is available from more than a source, hierarchical rules are implemented to select the most accurate and timely one.

Figure 5.2

The production process of the Bank of Italy’s BOP business register



5.44. The complete population list is usually too large to be used efficiently in a survey strategy. In Italy the companies compiling a balance sheet are around one million, but the large majority of them (about 90 per cent) are not involved in international operations. Moreover, the phenomena under investigation are concentrated within bigger enterprises. For this reason, the sample strategy is more efficient if only the “relevant subpopulation” is considered. To this end a dimension threshold is applied, according to which only the firms with total assets or turnover greater than 1 million of euro (about 350.000 units) are included in the subpopulation.

5.45. The role of the business register in the direct reporting system is twofold. In addition to allow the identification of the target population, it contributes with *auxiliary information*, used in three different ways:

- i. to reduce the population, with a cut-off strategy,
- ii. to stratify the population in homogeneous clusters,
- iii. to derive model-based estimators directly in the estimation process

C.3. Country experience: Spain

5.46. *Resident/non-resident trade in services.* Since 2005, the National Institute of Statistics (INE) has been entrusted with the compilation of the International Trade in

Services Survey (ITSS), with the aim of helping the Bank of Spain (BE) in the estimation of the Other Services item of the balance of payments. The ITSS was designed on the basis of different business registers of various institutions because the INE's Central Business Register (DIRCE), which is the business register developed and traditionally used by INE as the statistical framework for almost all business surveys, did not contain any variable that permitted direct identification of exporters and importers of services. For this reason, four different populations from different registers were considered according to the prior degree of certainty held with regard to the involvement of the companies in international sale and purchase operations:

- i. A so-termed stable population, made up of declarants who had been regularly making foreign payments and receipts for services transactions for a substantial amount (75% of the total), plus the set of Spanish embassies and consulates. This population, stemming from the Bank of Spain International Transactions Reporting System (ITRS) (based mainly on bank settlements), was investigated exhaustively. Size of the population in 2005 (4126). Size of the sample in 2005 (4126).
- ii. The population of enterprises from the record of monthly VAT returns of Large Companies to the Spanish Inland Revenue Service (AEAT) which, though not appearing in the above population, declared in their monthly VAT return having carried out an international transaction, without it being possible in principle to distinguish whether this was a goods or services transaction. Size of the population in 2005 (12094). Size of the sample in 2005 (1581).
- iii. The population of enterprises from the Spanish Inland Revenue (AEAT) Large Companies record which, while not appearing in the population of stable companies, reported in their monthly VAT return not having carried out international goods transactions, without ruling out that they might have had services transactions. Size of the population in 2005 (9370). Size of the sample in 2005 (1102).
- iv. The population made up of all the other companies, which is composed of the set that arises after excluding from the INE Central Business Register (DIRCE) the companies of the three previous populations and the companies with fewer than 10 employees. This last DIRCE population was investigated by sampling, along with the two preceding AEAT ones. Size of the population in 2005 (146402). Size of the sample in 2005 (3495).

5.47. The results obtained by the ITS survey between 2005 and 2012, in accordance with a sampling design based on the four above-mentioned populations, showed significant differences in level but not in trend from those obtained by the Bank of Spain settlements system. The populations and statistical frameworks that will be used in the survey as of 2013 are extremely varied, but it was agreed between INE and the Bank of Spain to give absolute precedence to the register of declarants stemming from the Bank of Spain settlements system, as these offer the absolute certainty, at least until 2014, that they carry out foreign receipts and payments in excess of €50,000 for transactions involving services and the new income and capital items. The intention with this is to reduce to the maximum the number of survey respondents who may state in the questionnaire that they do not carry out such transactions.

5.48. The populations considered are:

- i. A population referred to as stable, made up of declarants who in the last three years have been regularly declaring foreign payments and receipts for services transactions and operations relating to the new income and capital account items included in the survey, and for a substantial amount (they cover 90% of the total receipts and payments of the items), plus the set of Spanish embassies and consulates. This population stems from the so-termed Bank of Spain bank settlements system. Size of the population in 2011 (3397).
- ii. A population termed as non-stable, which will be composed not only of non-stable units with regard to the phenomenon being studied (the services and new items of the income and capital account), but also of all the other Bank of Spain declarants for foreign receipts and payments of any item of the balance of payments other than those within the study scope. Size of the population in 2011 (77626).
- iii. Payment Services Suppliers (PSS), namely the retail banks, savings banks, credit institutions or other officially registered financial intermediaries that inform the Bank of Spain of their clients' receipts and payments operations via the settlements system, but which have no obligation to inform of own account operations. Their own account operations will be investigated exhaustively. Size of the population in 2011 (386).
- iv. Population of VAT return records for services operations in the EU (AEAT). In this population the operators were identified with all their services operations with other EU Member States of €50.000 or less. Since the Bank of Spain population does not cover transactions below the €50.000 threshold, it became necessary to select this population from another source such as VAT in order to include it in the survey design and thereby be able to estimate the services operations below this threshold. The drawback is that it only covers services operations in the EU (they represent around 70% of Spain's total services exports and imports). Size of this Stratum in 2011 (55260).
- v. Population of INTRASTAT/ EXTRASTAT declarants that carry out outward and inward shipments of goods for processing/processed and for repair/repared (Customs). Introduction of the new processing and repair services in the EBOPS 2010 made it necessary to find a population of declarants for these services. Although customs information does not allow us to value the service, as it only takes into account the value of the goods before and after being processed or repaired, it does enable us to identify the operators that send/receive goods to/from abroad for processing or repair or already processed or repaired, so as to ask them in the questionnaire for the value of the service. Very few companies cover 80% of the value of these flows of goods (41 in processing and 27 in repair in 2011). Due to this high concentration all of them are very likely to be investigated exhaustively.

5.49. It may be confirmed that the Central Business Register (DIRCE) does not form a statistical frame by itself in the new sampling design, as happened until 2012, and its main function is to characterize the companies of the different populations by main economic activity and size, which will enable us to sub-stratify each stratum by these two variables and in this way select a representative sample in those non-exhaustive strata.

5.50. *FATS*. The set of INWARD *FATS* statistics is compiled from the INE structural business surveys in respect of industry, services and R&D, along with information on construction, insurance and the financial sector stemming from the Ministry of Development,

Ministry of the Economy and Competitiveness and the Bank of Spain, respectively. The majority of these surveys use the Central Business Register (DIRCE) as the business register. DIRCE records the "group of enterprises" statistical unit amongst its levels of information available. The system is updated on a yearly basis in a way similar to the other statistical units. The maintenance processes affect both the basic features of the groups and the units forming them. In this process access to a complete set of both administrative (corporation tax groups) and private (Dun & Bradstreet database or INFORMA/IBERINFORM shareholder database) is absolutely crucial.

5.51. For each DIRCE company (legal unit) it is possible to know whether it operates independently or under a group of companies. In this case, the nationality of the group is an available variable, which identifies the INWARD FATS population directly. The information recording system enables us to reconstruct the truncated part of each multinational group in Spain on the basis of the chain of control: Affiliate-Parent-Head Group. When producing the sampling design of the structural business surveys, it is taken into account that this design has also to be suitable for elaborating the INWARD FATS. In such surveys, besides the variables being studied, information is obtained on the country of the ultimate controlling institutional unit (UCI), which is used for crosschecking the information of the Central Business Register (DIRCE).

5.52. The set of OUTWARD FATS statistics is obtained directly from the statistical exploitation of an administrative register from the Ministry of the Economy and Competitiveness called the Foreign Investments Register (RIE). Amongst the forms needed for the compilation of this Register is the Annual Report Relating to the Development of Foreign Investment that every investor resident in Spain who makes investments in foreign companies that have a net worth of more than €1,502,530.27 and in which the investor's stake in the capital or participation in the total voting rights is 10% or more has to complete. On the basis of a Cooperation Agreement with INE, the Ministry sends INE every year the micro-data of this Report, which proves extremely useful for elaborating the OUTWARD FATS. Its main items are: (i) investor's identification data, (ii) data of the partly-owned subsidiary or foreign branch, (iii) data of the subsidiary partly-owned by the company entered in item (ii), and (iv) data of the non-instrumental companies partly owned by the foreign company entered in item (iii). The main variables of these items include amongst others: identification of the company, its legal status, its main business activity, number of employees, turnover, and other economic variables, % of foreign participation and country, and % of Spanish participation. The register allows us at least to identify for each company its immediate investor or its degree of participation, up to a total of three elements of the chain of ownership. Furthermore, information is also obtained from the Bank of Spain on the financial affiliates which have credit institutions as their parent companies.

C.4. Country experience: Uruguay

5.53. The National Statistics Institute (INE Uruguay) is in charge of the creation and maintenance of the national business register. Information sources used for the maintenance of the business are divided into administrative and other sources.

Table 5.3

Country experience of Uruguay: sources

Administrative sources		Other sources	
Basic	Secondary		
Tax authority (D.G.I. Dirección General Impositiva)	Internal economic surveys INE	Phone directory (yellow pages)	Web pages
Social Security agencies (B.P.S. Banco de Previsión Social, Caja Bancaria, Caja Notarial, Caja de Profesionales)	Other public agencies:	List of associated members to commercial chambers	Press information and publicly traded company information
	Ministry of Tourism, Ministry of Transport		
	Superintendencies		

5.54. The enterprises directory was created in its actual version after the economic census of 1996. The census was the original source of information and it was updated yearly with the social security records until 2001 when the agreement between INE and BPS fall. From 2001 to 2007 the directory freezes and only the changes detected by surveys were updated. In 2007 there was a new agreement between INE, BPS and DGI and these institutions became the main sources to the directory.

5.55. There are annual agreements with the tax authority (DGI) which are automatically updated; Social Security agency (BPS), Consumer protection association (Liga de Defensa al Consumidor) for the business situation and with the Ministry of Tourism, who provides data of hotel occupation. There is also a quarterly agreement with a professional association. In relation to companies operating under the free zone regime, information is obtained through a census of these companies.

5.56. The INE will include for this new version information on foreign ownership and on involvement in trade (in services), following the guidelines designed in the IADB's project for Latin American Business Register and the Manual on Statistics of International Trade in Services 2010. The business register in Uruguay will be the masterpiece in detection of international trade in services. As part of its new design, the interviewers will ask about the main and secondary activities of companies and their establishments. Additionally, they will ask about the goods and services produced by the company and its establishments and about the destination of the sales (national or foreign and country of destination). They will ask too about the property of capital (national or foreign) and will ask if the company owns or is owned by another company, local or foreign based. When the register will be updated with this new information it will be designed a new survey to estimate the international trade in services and FAT statistics.

Table 5.4

Country experience of Uruguay: types of statistical units

Type of statistical units	
Local	Activity is observed and takes into account different physical locations
Establishment	Interested in the activity and physical location
Unit by kind of activity	Company is divided according to the different activities economic performed, regardless of physical location
Enterprise, Group of enterprises	Legal entities whose observation is viable through administrative records

5.57. There are 140,000 company records, of which 110,000 are small and therefore, excluded from the business surveys except for household surveys. There are about 2,000 large companies present in more than one location, which also consists of several establishments. Large companies are required to answer the survey. Midsize companies are reviewed through administrative records provided by the tax authority.

Table 5.5

Country experience of Uruguay: content of the business register

Content of the Business Register	
Identification variables	<ul style="list-style-type: none"> •ID and Name •Legal figure •Address
Classification variables	<ul style="list-style-type: none"> •Main economic activity (ISIC Rev. 4) • Size indicators (staff employed and sales)
Management variables	<ul style="list-style-type: none"> •Activity status •Relevant dates (start up, stoppage)
Other type of variables	<ul style="list-style-type: none"> •Surveys participation •Control links •Source of information

5.58. The computer system for data processing statistical units classified according to economic activity is currently being revised to incorporate improvements and 2010 Census information, which will provide a basis for studies on geo-referenced areas and expand knowledge about the company distribution in the country.

Chapter 6 Enterprise and Establishment Surveys

6.1. *Scope.* This chapter describes enterprise and establishment surveys, which are needed to collect data for the compilation of statistics on resident/non-resident transactions in services and FATS. The Chapter promotes an integrated approach to the organization and conduct of the surveys, keeping the response burden as low as possible and linking trade in services and business statistics. The Chapter consist of the following sections: General description of enterprise or establishment surveys (Section A), Surveys of resident/non-resident services transactions (Section B), Foreign affiliate statistics and the international supply of services (Section C) and Combined trade in services-FATS surveys (Section D).

A. General description of enterprise or establishment surveys

6.2. *Enterprises and establishments.* Definitions of these statistical units are provided in Chapter 5. The SITS compilers are advised to make sure that the national definitions comply with the standard definitions and document any deviations in SITS metadata. Surveys can be conducted at the establishment level or the enterprise level. Detailed descriptions of the types of surveys, their design, sampling techniques as well as related data editing and data compilation procedures are described in a number of publications⁹².

A.1. Survey approaches

6.3. *Determining the survey population.*⁹³ A decision needs to be made as early in the exercise as possible as to whether to undertake a census, or compile data from as large a sample survey as possible. In determining the reporting population, various approaches are possible. In practice, compilers in many countries use a combination of two or three approaches when collecting data from enterprises:

- i. *Census:* Includes all members of the population;
- ii. *Partial coverage collection survey:* Includes all enterprises above a certain threshold measured in terms of their dimensions (e.g. nominal capital) or other variables (e.g., significant cross-border activity);
- iii. *Random sample survey:* Includes enterprises that are preferably selected according to rigorous sampling procedures, with the results “grossed up” for the whole population;
- iv. *Stratified random sample:* groups population components according to the size of selected activity so that enterprises within different strata have different probabilities of selection. Usually, this is a combination of the partial coverage and random sample options but is more sophisticated and might produce a high level of coverage while remaining relatively cost-effective.

⁹² For example in the Eurostat *Handbook on the design and implementation of business surveys*, available at : http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/CA-09-97-818/EN/CA-09-97-818-EN.PDF and Eurostat publication *Survey sampling reference guidelines: Introduction to sample design and estimation techniques (2009)*, available at: <http://ec.europa.eu/eurostat/ramon/statmanuals/files/KS-RA-08-003-EN.pdf>. Many countries published their guidelines as well. Chapter 2 of the draft BPM6 Compilation Guide also provides guidance on how to conduct enterprise surveys.

⁹³ BPM Compilation Guide, chapter 2, p. 13.

6.4. A census is useful to provide the benchmark for estimating the universe in subsequent surveys when samples may be used. However, for most activities, it is not necessary that the compiling country conducts a census covering all enterprises as it would be too much burden and many countries are not equipped for it. Maintaining an up-to-date information database of all additions (and deletions) of enterprises in the register is an essential part of keeping the estimates as accurate as possible.⁹⁴

6.5. For countries that have not undertaken an enterprise survey before, it will be highly beneficial to initially focus on the largest firms in their economies that are involved in the activity being measured, with less attention given to smaller firms. Consideration should be given to more sophisticated methods of compiling data, only after experience has been gained in conducting the survey, such as by conducting a sample survey with estimation for non-sample firms. Undertaking a sample survey without a good understanding of the relative size and importance of the enterprises being surveyed may produce data that cannot be reliably grossed up to a universe total (more details on grossing up techniques are presented below).⁹⁵

6.6. Grossing up the data without a census is more difficult than conducting a survey, which requires prior knowledge of the approximate size of the universe. The size of the universe involves two major dimensions: the number of entities in the universe, and the individual weight of each enterprise's transactions. As economic statistics are primarily concerned with values, in any survey, the focus of a survey should be on those entities with the highest weights. In this regard, it may be appropriate to conduct a census of those enterprises that constitute, for example, 90 percent of the total activity being targeted and to conduct a sample survey or use models to estimate the remaining 10 percent of data. However, it is also important to stress that there are increasing demands for data on small- and medium-sized enterprises (SMEs), so that, if a sample survey is employed for those enterprises with the smallest contribution to the total, it may be useful to bear this information in mind when the sample is designed, so that the detail on the SMEs is sufficiently robust for analysis, especially at the industry level.⁹⁶

6.7. The exploratory survey can be used to collect broad information on the size of services transactions of individual transactors in the population frame. This information could be used directly to estimate the impact of units not surveyed in the partial coverage collection, or it could be used indirectly in the creation of a framework for a sample survey. Because sample surveys are relatively inexpensive, they can be conducted at frequent intervals—for example, annually or quarterly—and can provide high quality factors for expanding results from partial coverage surveys. Another advantage with sample surveys is that the impact of non-response may be reduced. The disadvantage with sample surveys is the presence of sampling error.⁹⁷

6.8. Nonetheless, non-response is likely to be a concern with either a census or a sample survey. An appropriate approach to dealing with it should be decided before the data are collected,⁹⁸ and applied in a flexible way as the survey develops.⁹⁹

⁹⁴ Ibid.

⁹⁵ Ibid.

⁹⁶ Ibid., page 14.

⁹⁷ Ibid.

⁹⁸ Ibid., paragraphs 2.56-2.62.

⁹⁹ Ibid., chapter 2.

6.9. Large transactors must be approached each time a partial coverage collection is conducted. It is therefore important that the list of large transactors be kept up-to-date. Use of partial coverage collections can provide cost savings without much loss of quality. If the partial coverage approach is used for balance of payments surveys, the compiler should develop methods to measure, at frequent intervals, the contribution to balance of payments activity of all members of the population. These measurements could be made by using an exploratory survey, a sample survey of smaller units, or a benchmark census.¹⁰⁰ Partial coverage collection would serve equally as well for SITS purposes.

6.10. Efficient sampling procedures seek to keep both the number of units selected and the sampling error to a minimum. These objectives are usually achieved by stratifying the population. Two factors predominate in the determination of sampling error. One is sample size; the larger the sample, the smaller the sampling error. The other is the variability of the activity being measured; the wider the dispersion of the activity, the greater the sampling error. Population size is not an important factor unless the population is very small or the sample size approaches the size of the population. Stratification involves grouping the units into similar size bands and selecting an independent sample in each band. Variability of units in each band is less than the variability of the population of units as a whole. Typically all units in the largest size stratum are enumerated. By using stratification techniques, the compiler essentially increases sample size for units likely to have large absolute variability in size of activity.¹⁰¹

6.11. In addition to supplementing partial coverage surveys, sample surveys can also be used as the primary survey method. For example, the compiler can use sample surveys as the principal source of information on international trade in selected services. However, compilers in many countries choose not to use a sample survey approach to supplement partial coverage surveys. Instead, they use benchmark censuses to establish the contribution of smaller units. These censuses are usually costly and undertaken infrequently. Therefore, revisions to results may be made at greater intervals. However, benchmark censuses typically provide more detailed information than other approaches and also establish whether or not some entities, which should now be included in the completely enumerated partial coverage survey, have changed size during inter-census periods.¹⁰²

6.12. The compiler must be careful to select the correct population. To do so, the appropriate target group, probably the larger enterprises, should be engaged through consultation meetings. These discussions should make these entities aware of the purpose of the survey and help the statistical agency design the survey so that it is most efficient in obtaining the desired information. Even where the statistical agency has the legal right to collect the data, this does not guarantee the cooperation of the target group – and cooperation is essential for good results.¹⁰³

6.13. In approaching the target group, the compiler needs to know not only the concepts that are to be measured but also the nature of the business activities that are being surveyed. He or she also needs to be aware of such things as the terminology used in the business activity, the nature of the operations, record keeping, and accounting practices of the target businesses in order to be able to communicate with the target group and to gain their respect

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Ibid., page 15.

¹⁰³ Ibid.

and cooperation. Businesses are not all structured in the same manner. The information sought may be recorded in different ways in different organizations – especially for large complex entities – so some flexibility in how the data are captured is helpful.¹⁰⁴

A.2. *Survey design*

6.14. Surveys should be based on clearly defined objectives, sound collection methodology, and a well-established legal basis. Properly designed collection forms, full coverage of the population, well-defined data structures and classifications, and effective data validation and aggregation procedures are also required.¹⁰⁵ The principles of survey design include:

- i. Specifying the objectives and coverage;
- ii. Establishing the sampling unit from which information is drawn and the information to be collected;
- iii. Determining the appropriate sample size, if a sample will be used;
- iv. Developing a sampling frame, an exhaustive list of sampling units;
- v. Developing the sample design, i.e. how the sample is selected from the frame;
- vi. Determining the method of collection (paper form, electronic, interview, etc.).

6.15. Surveys of businesses can provide the coverage across the full range of services. Model form 6 in Appendix 8 of the BPM6 Compilation Guide provides guidance on a comprehensive survey of services.¹⁰⁶

6.16. Business surveys on services have proven successful in a number of countries. However, some general observations are in order. Surveys of businesses are designed to collect both credit (receipts) and debit (payments) items. On the receipts side, the particular service provided is likely to relate closely to the industry activity of the enterprise approached; for example, the legal industry is most likely to provide legal services. This is less true on the import side, although there are likely to be greater associations of certain services with particular industries. Enterprises engaged in international trade in services may be those undertaking other international business activities. Therefore, it is possible to identify a large part of the population involved in import of international trade in services by approaching enterprises involved in a direct investment relationship, enterprises that have large external assets and liabilities, and enterprises that have large transactions in goods.¹⁰⁷

6.17. There are at least two feasible approaches for establishing the survey population of the business enterprise sector. One is to take a census-based survey of large enterprises and a sample of smaller ones belonging to a certain population (in terms of industry and size class) from the entire sector in order to identify R&D performers and request the information from them. The choice of enterprises should be based on a business register of good quality. In this

¹⁰⁴ Ibid.

¹⁰⁵ BPM6 Compilation Guide, chapter 2, paragraph 2.3.

¹⁰⁶ Ibid., chapter 3, paragraph 3.12.

¹⁰⁷ Ibid., chapter 3, paragraph 3.13.

approach, R&D performed in the past in the enterprise is not considered. This is the approach followed in innovation surveys.¹⁰⁸

6.18. Surveys of this kind will cover a large number of enterprises and are expensive if applied to all industries and all enterprises regardless of size. It is therefore necessary to limit the target population in terms of size of enterprise and industries covered. This normally leads to the systematic exclusion of very small enterprises and enterprises in certain less R&D-intensive industries. When the sample size is very small, estimates may be less reliable, owing to raising factors.¹⁰⁹ A similar problem could arise with services surveys, where limiting the target population could result in the exclusion of small enterprises and enterprises that are not primarily engaged in providing services.

A.3. *Sampling techniques*

6.19. A survey sample can be developed using probabilistic or non-probabilistic methods.

6.20. *Probability sampling.* Under probability sampling, every unit in a population has a calculable probability of being selected in the sample. This approach is objective and defensible. There is a theoretical basis for the process of extending the sample results back to the population. Under this approach, estimates of sampling error can be calculated and inferential statistics can be derived.

i. *Simple random sampling:* In a simple random sampling scheme, each unit has an equal chance of being included in the sample. To conduct a random sample, one must generate random numbers for selecting the units in the sample.

ii. *Systematic sampling:* Systematic sampling involves selecting units from a list using a selection interval (every N units). This is a quasi-random sampling method but under this method it is easier to draw the sample. Also, this method tends to distribute the sample more evenly in the population. This sampling is affected by any ordering or pattern in the sampling frame. When prior information is available about the respondents on a sample frame, it is possible to utilize techniques such as stratification and to sample with probabilities proportional to size (PPS).

iii. *Stratified sampling:* This method uses relevant information available for the units in the population to increase the efficiency of the sample. It involves the division or stratification of a population into relatively homogenous groups called strata and the selection of samples independently in each of those strata. Stratification is limited only to those items of information which are available on the frame. For services surveys, this can include firm size, country, and type of transactor. Stratified sampling ensures that each sub-population is adequately represented in the overall sample. This method is also more efficient than simple random sampling.

iv. *PPS:* Each unit has a probability of selection in proportion to its size (or some other indicator of importance, but size is commonly used). Once these probabilities of

¹⁰⁸ Organisation for Economic Co-operation and Development, Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development, 6th edition, 2002, paragraph 436.

¹⁰⁹ Frascati Manual, paragraph 437.

selection are assigned, either simple random or systematic sampling techniques can be used.¹¹⁰

6.21. *Cluster sampling:* To use cluster sampling, the population has to be structured in terms of a hierarchy. The more heterogeneous the clusters are within themselves, the more efficient the cluster sample is.

6.22. *Multi-stage sampling:* This is when sampling is done within a given group, for example a random sample within a given region or within an industry. Multi-stage sampling can be used in combination with cut-off sampling (described below). For example, “in selecting the industries in the manufacturing sector that will be included as sample strata, a threshold can be established that only industries that represent 1 percent or more of output will be chosen.”¹¹¹

6.23. *Non-probability sampling.* There are other methods of sampling that are not based on probabilities. However, these methods should be used with caution because there is no way to measure the precision of non-probability sampling. These methods require making assumptions of an even or random distribution of characteristics in the population. The only way to address the quality of the survey data produced under non-probability sampling is to compare the results of the survey to some known information about the population.

6.24. *Quota sampling:* Similar to stratified sampling, under quota sampling, the sample is divided into sub-groups. However, under quota sampling, judgment is then used to select the units for each sub-group until some proportion or quota is met. Therefore, the sample selection is non-random.

6.25. *Cut-off sampling:* Cut-off sampling is a strategy frequently used by countries to select samples. In this approach, a predetermined threshold is established with all units at or above the threshold included in the sample (selected with certainty) and units below the threshold level not included (zero probability of selection). Cut-off sampling generally results in a high degree of coverage among a small number of prospective units. This occurs because the distribution of the selection variable (for example, production or sales) is concentrated in a small number of large establishments.¹¹² This method is resource efficient and ensures large firms are included. However, there is no way to determine if firms that fall below the cut-off behave in similar ways to the firms in the survey.

6.26. Cut-off sampling is a common technique in economic surveys in cases when most economic activity is generated by the largest firms¹¹³. It can be used to reduce the number of firms required to report in non-benchmark years, thus reducing the burden on excluded firms and reducing processing costs.

6.27. Sample frame cut-offs are reevaluated regularly. If benchmark surveys are conducted, cut-offs are typically left unchanged between benchmark surveys and are often increased at each benchmark, for a couple of reasons. First, since cut-offs are set in nominal terms, inflation will eventually cause enterprises that did not grow in real terms to exceed cut-offs.

¹¹⁰ International Monetary Fund, *Producer Price Index Manual: Theory and Practice*, September 2004, page 107.

¹¹¹ *Ibid.*, page 108.

¹¹² *Ibid.*, page 108.

¹¹³ The U.S. Bureau of Economic Analysis (BEA) uses multiple-criteria cut-off sampling for its surveys of trade in services and foreign affiliates statistics.

Therefore, small enterprises may face a higher reporting burden due simply to price changes. Second, industry consolidation may increase the share of economic activity originating from the largest firms. Therefore, it may be possible to increase thresholds without significant loss of coverage.

6.28. Compilers must consider resources when using cut-off sampling. Lower cut-offs reduce the amount of data that needs to be estimated. Since more enterprises are required to respond, a greater share of the estimates are actual data from reports. Estimates with lower cut-offs are likely to be more precise. However, lower cut-offs also impose a number of costs on respondents as well as the compiling agency.

6.29. Requiring more firms to respond imposes a burden on respondents since firm employees must devote time and effort to gathering information and filling out forms. Once a report is received, it requires substantial effort by editors to process. Processing more reports is more costly and slows the issuance of data. Cut-off sampling significantly reduces the costs of a survey by reducing the number of both reports and items filled out and processed.¹¹⁴

6.30. Whether selecting a sample using probability or non-probability techniques, compilers must define the universe (population) from which they will sample, that is, construct a sampling frame. In most countries it is possible to define the population using various lists of enterprises (business registers), compiled for administrative purposes.¹¹⁵

A.4. Survey explanations, training of respondents, exchanges with respondents

6.31. The BPM6 Compilation Guide provides guidance on corresponding with respondents (see chapter 2). Importantly, in order to select the correct respondent population, the appropriate target group, probably the larger enterprises, should be engaged through consultation meetings. These discussions should make these entities aware of the purpose of the survey and help the statistical agency design the survey so that it is most efficient in obtaining the desired information. Even where the statistical agency has the legal right to collect the data, this does not guarantee the cooperation of the target group – and cooperation is essential for good results.¹¹⁶

6.32. In approaching the target group, the compiler needs to know not only the concepts that are to be measured but also the nature of the business activities that are being surveyed. He or she also needs to be aware of such things as the terminology used in the business activity, the nature of the operations, record keeping, and accounting practices of the target businesses in order to be able to communicate with the target group and to gain their respect and cooperation. Businesses are not all structured in the same manner. The information sought may be recorded in different ways in different organizations – especially for large complex entities – so some flexibility in how the data are captured is helpful.¹¹⁷

¹¹⁴ Adapted from U.S. Bureau of Economic Analysis, “Statistical Standards Reports for Surveys Collected by the Bureau of Economic Analysis,” April 2010.

¹¹⁵ For more information on sampling techniques, sample frame, sample structure, and sample allocation (how to allocate the data collection between the strata) see PPI Manual, chap. 5. While the Manual focuses on price collection, much of the information can be applied more generally to enterprise or establishment surveys.

¹¹⁶ BPM6 Compilation Guide, paragraph 2.29.

¹¹⁷ Ibid., paragraph 2.30.

B. Surveys of resident/non-resident services transactions

B.1. Generic Trade in Services Surveys

6.33. *Planning a generic trade in services survey.* A generic trade in service survey is a survey of enterprises with potential balance of payments transactions. Enterprise surveys can be used to capture data for most elements of the balance of payments and IIP,¹¹⁸ and serve SITS purposes equally as well.

6.34. Below is a description of the steps that compilers will need to take into account when developing and conducting an enterprise survey.¹¹⁹

- i. Determine under whose authority survey will be conducted.
- ii. Definition of the population and creation of a survey frame: Details to be stored on information database. Begin development of information database of potential respondents.
- iii. Identify sources to establish a survey frame.
- iv. Determine coverage of survey: sample or census.
- v. Determine quantity and type of data to be collected and discuss with a sample of potential respondents.
- vi. Draft survey forms and discuss with a sample of respondents.
- vii. Undertake initial discussions with key respondents.
- viii. Finalize survey forms.
- ix. Conduct trial run with a small selection of respondents. All other respondents should be reminded of the survey.
- x. If feasible, inform respondents of the upcoming survey.
- xi. Begin seminars to educate respondents of the surveys needs and requirements.
- xii. Mail questionnaires.
- xiii. Survey data due from respondents.
- xiv. Follow up with those that have not reported. Enter responses on information database. Process results for dissemination.
- xv. Review results for quality.
- xvi. Release results.

¹¹⁸ BPM6 Compilation Guide, paragraph 2.2.

¹¹⁹ Ibid., Chapter 2, Box 2.1.

6.35. The organization and conduct of trade in services surveys is a complex task which countries approach depending on their needs and circumstances. Some countries had to develop the survey systems in view of lack of necessary information from banks' records on payment transactions (settlement system). The experiences of France and Austria, which are provided below, provide valuable lessons for other countries which might decide to develop new or improve existing surveys for SITS purposes. More country experiences are available at the UNSD website.

6.36. *Development of a survey frame.* The development of the balance of payments register may be regarded as a two-part activity. In the first phase, enterprises with potential balance of payments transactions are identified as being engaged in cross-border activities via sources previously described. The register then becomes the source list for enterprises to be included in balance of payments surveys. These enterprises are then compared with units already listed on the register. The compiler should make every effort to identify all units with potentially significant balance of payments transactions. An exploratory survey may be used to discover what, if any, balance of payments activities the enterprises are involved in and the size of those activities.

6.37. Once the balance of payments register is established, it should be updated and extended as necessary. The compiler should keep abreast of developments taking place in the economy—for example, by reading the financial news. He or she should also be alert to any major changes among sources used for initial identification of enterprises with potential balance of payments transactions. Some enterprises will need to be dropped from the register as they do not have the type of transactions/positions being measured, while others will need to be added.¹²⁰

6.38. A model survey questionnaire is available on the UNSD website.

B.1.a. Country experience: France

6.39. Derived from an exchange control regime dismantled as from the mid-eighties, the French International Transaction Reporting System initially allowed for almost comprehensive information on international trade in services. Indeed it was based on cash transactions with non-residents that pass through domestic banks and information from the – relatively – circumscribed number of direct reporters that were involved in international trade. As the patterns of international trade changed, and as the number of involved companies increased, the risk that the ITRS lost its relevance increased progressively. The decision was thus taken to stop using these data. A direct reporting system was set up, mostly by the development of a new survey ('Enquête complémentaire sur les échanges internationaux de services' - ECEIS).

6.40. *The new ECEIS survey and its sampling frame.* ECEIS collects information from a sample of non-financial corporations taking part in international trade in services, besides direct reporting from DDG companies. Theoretically speaking, such a sample needs to be drawn through a random selection procedure among the exact population of non-financial corporations involved in international trade in services. In practice, however, the list of such companies is not known beforehand, since the French business register does not include information about international trade in services.

¹²⁰ Ibid., page 11.

6.41. The sampling frame is therefore built up through multiple data crossing. This multiple data crossing was enabled in particular by extensive research work on the FIBEN data base managed by Banque de France. The FIBEN database includes descriptive and accounting data on all French large and medium size non-financial companies. From this database, typologies of companies can be drawn and samples of companies likely to be involved in international trades in services can be defined. However, this approximate selection method does not prevent some of the enterprises belonging to the relevant population from being excluded (under-coverage issue) and, conversely, some enterprises outside the relevant population from being included (over-coverage).

6.42. The building of the sampling frame has been improved in the course of time, through the use of new data sources, and through finer selection rules. Those new rules helped in overcoming the under-coverage and over-coverage issues via an appropriate adjustment of the sampling frame and of the associated sample. The sample and sampling frame from the latest ECEIS survey relies mainly on the micro-level data regarding services traded with French companies, collected from EU countries customs, in the context of VAT declaration for intra-community trade. The use of such data represents the ultimate improvement in the sampling process, which should be, from now on, stabilized.

6.43. Roughly 40,000 enterprises exporting either a minimum of EUR 200,000 of services or importing a minimum of EUR 75,000 are thus included in the sampling frame. The selection threshold for imported services is lower, due to a lesser concentration within the population of importers.

6.44. *Sample.* A 5,000 sample of firms is drawn from among these 40,000 firms. This sample is made of two distinctive layers:

- i. An exhaustive stratum including the 1,000 largest (non DDG) contributors, surveyed every year;
- ii. A randomly sampled stratum including 4,000 enterprises. The sampling scheme relies on a varying sampling rate applied to a grouping of the sampling frame into 40 categories crossing global turnover and industry. A quarter of this stratum is renewed every year, ensuring a fully renewal of the sample every 4 years.

6.45. As to estimate the amount traded under the selection thresholds, a complementary sample of 500 enterprises is also surveyed. This sample, which covers the population of nearly 290,000 firms trading international services under both thresholds, has been added to the ongoing data collection.

6.46. *Data collection.* The data are collected on a yearly frequency. Notwithstanding the limits associated to the former ITRS data sourcing, this entails a loss of information on the monthly profile of trade in services as compared to the former ITRS system. The monthly data breakdown is estimated statistically. To complement the reporting system, as financial intermediaries are not concerned by DDG or ECEIS, the ‘CRT’ survey (for ‘Compte-rendu de transactions’) includes data on banks’ international transactions of services, on a monthly and annual basis. For the ECEIS survey, the response rate reaches 75%.

6.47. *Keeping the system working: relationships with reporting firms.* Whatever the legal basis, a direct reporting system is based also on the appropriate involvement of reporting firms to extract consistent data from their information system and perform quality checks on

an ongoing basis. This issue is all the more crucial as central banks usually are not entitled with supervision powers over non-financial firms that report their international service transactions. This is namely the current situation for Banque de France. In order to obtain good quality information from the relevant non-financial firms Banque de France initiated a process in order to get the ECEIS survey certified as a public enquiry by the Conseil National de l'Information Statistique (CNIS, National Council for Statistical Information).

6.48. *Fewer data, deeper data quality control.* Among other requirements, the 'label du CNIS' demands a restrained burden of response for surveyed enterprises. To fulfil this request, the geographical breakdown of the collected trade in services data is restricted to the 3 main counterpart countries. The geographical breakdown for services traded with the rest of the world (roughly 15% of total) is achieved statistically.

6.49. Although the search for an optimization of the reporting burden creates restriction in the availability of direct information on some geographical breakdowns and the frequency of reporting, it is offset by a significant improvement in the quality and reliability of data. Indeed, direct reporting offers two new opportunities: i) supplementary qualitative information that can be used to enrich further analysis (such as economic studies) or to facilitate external data crossing, as a means of control; ii) afterwards contact with responding companies as to obtain confirmation / clarification regarding seemingly dubious declarations. This entails a great leap forward in collected data quality. But it also introduces new issues which are briefly described below.

6.50. *A brief assessment of the quality of the new system.* The ECEIS survey is a big leap forward in measuring international trade in services. The survey has been integrated in the French Balance of Payments since 2010, but the time series data has been collected since 2008. This gives a three-year overlap to compare results and facilitate reinterpolation. It also suggested an underestimation in the traded flows measured in the former CRP.

6.51. The un-weighted flows obtained on the ECEIS survey sample were of the same magnitude than those obtained by the CRP on the general population. Compared to the weighted flows, non-DDG trade in services appeared to be under-estimated by 70% for exports, and roughly 50% for imports.

6.52. Another clue suggesting that former ITRS ("CRP") data lead in the end to an underestimation of flows in cross-border services stems from existing discrepancies with mirror data. Compared to the trade in services with France measured by 30 countries, and published in Eurostat web database, CRP + DDG data indicated an underestimation of roughly 30% (for both imports and exports), which is currently reduced to near 0% for exports and under 10% for imports.

6.53. *New issues arising and some insight as how to alleviate them.* Although the reference to mirror data requires in depth analysis and caution, it can help introducing additional improvements in the measure of imports.

6.54. From a reporting firm's point of view, imports are more difficult to track than exports because information is not available through standard accounting records. Therefore, separating true non-response and false absence of imports by crossing survey answers and mirror data on a micro-level basis is important. True non-response issue can be then addressed through standard statistical treatment. In the present case study this method allows to strongly reducing the remaining discrepancy in imports with mirror data. However this

should be regarded as a contingent outcome. The reference to mirror data is justified to deal with the “non-response”, whatever the final outcome as regards asymmetries. Indeed, persistent asymmetries, or new asymmetries in the future, might not necessarily point out to issues arising from the ECEIS survey, as it may come from issues encountered by the compilers of the mirror data.

6.55. A second issue worth mentioning is the increased volatility in measured flows due to the use of a sample. This is particularly noticeable when analyzing change over time in any specific type of services. This sampling error issue exists in any sampling device, but is more critical with non-stabilized samples.

6.56. *Providing a user-friendly and secure environment for reporting firms: a new information system.* To build data quality management into a global approach, Banque de France has been dealing with the setting up of sound methodologies and large and robust samples. The information system is also critical. A portal to gather data is an excellent tool to build confidence and “partnership spirit” with reporting firms. Therefore, in cooperation with Bank of Belgium, Banque de France has launched an online platform for reporters to declare: “the ONEGATE virtual window”. It is a single web portal, reachable through the Banque de France’s website enabling each enterprise to upload requested data, thanks to a secure login / password.

B.1.b. County experience: Austria

6.57. *The need to establish a direct survey.* In Austria, the Oesterreichische Nationalbank (OeNB) is responsible for compiling and disseminating information on Trade in Services between residents and non-residents. Prior to 2006, data had been gathered as secondary information from banks’ records on payment transactions (settlement system). Banks had to report to the OeNB single transactions exceeding a threshold of EUR 12,500, including information about type of transaction, amount and currency as well as target country or country of origin. But economic globalization rendered this indirect reporting system increasingly unsuitable for providing high quality statistics demanded by national and international users. Among the contributing factors was the rise in intra-company liquidity management that eluded appropriate coverage by a bank-based reporting system (cash-pooling). As a result, the volume of trade and financial flows was distorted upward in statistics and did not reflect actual transactions of the economy. Further on, cross-border payment transactions were gradually harmonized within the euro area leading to a discontinuation of the related reporting obligations of banks.

6.58. These circumstances prompted the OeNB to redesign the data collection by switching from bank reports to direct surveys among economic agents. Since 2006, Trade in Services statistics have thus been compiled by taking samples from enterprises, institutional investors and banks (not including households). To keep the costs of data collection low and make utmost use of existing data, the OeNB works in close cooperation with Statistics Austria such that the OeNB concentrates on the financial corporations while Statistics Austria focuses on the real economic sector. Besides methodology, the OeNB remains responsible for consolidating the different reports and disseminating Trade in Services data.

6.59. *Scope.* On behalf of the OeNB, Statistics Austria compiles quarterly data on service exports and imports from non-financial corporations classified under sections B to J, L to N, P to S, as well as group 64.2 and division 66 of the Austrian Statistical Classification of Economic Activities (ÖNACE 2008), excluding agriculture, forestry, banks, insurance

companies, the public sector and non-profit organisations. The survey covers information on single partner countries and all business activities according to the Extended Balance of Payments Services Classification (EBOPS), except for travel. According to the implicit Mode of Supply (Mode 2), travel is captured separately, making use of different primary and secondary data sources, mainly statistics on overnight stays, guest interviews, business cycle statistics, credit card information and mirror data.

6.60. *Survey design.* The survey design for the nonfinancial sector is a stratified corporate sample (cut-off-survey) within the scope of the Structural Business Survey (SBS). For the first time in 2003 - and afterwards every 5 years -, Statistics Austria extended the SBS on commission of the OeNB to perform a survey on services exports and imports in the enterprise sector with the aim to identify the total population of enterprises engaged in Trade in Services. In 2003, the SBS covered approximately 32,000 out of 266,000 enterprises in Austria according to the size of turnover and number of employees, excluding financial corporations, public services and private households. Former settlement data were used for unit-non-response while estimates of remaining reporting deficits and values below survey thresholds were imputed. To this end, service exports and imports were stratified by industries and size according to turnover. The so calculated median values were applied to non-reporting enterprises. Robust regression was used to estimate service exports and imports at values below thresholds, calculating exports and imports as a function of turnover.

6.61. Conducting a distribution analysis of the basic survey results with the aim to establish the data precision and the quality of the regular enterprise survey, the OeNB decided for a cover rate of at least 90% of service exports and imports in every two-digit division according to ÖNACE. As a consequence, approximately 4,800 non-financial enterprises were selected to be surveyed regularly. The threshold for the reporting obligation was primarily set at EUR 200,000 for both service exports and imports during a given calendar year or EUR 50,000 respectively to reach the coverage of 90% of the concentration sample in every industrial sector. As from the reporting year 2013, the reporting threshold was uniformly raised to EUR 500,000 after administrative data sources have become available within the European Union (Value added Tax Information Exchange System according to Council Directive 2008/8/EC of 12 February 2008 amending Directive 2006/112/EC as regards the place of supply of services). According to the EU Directive, resident enterprises are obliged to report exports to enterprises resident in other EU member states to the national tax authority. As trade with other EU countries is of major importance for Austrian companies, these administrative data allow for a regular control of the reporting population as well as for estimating exports below the survey threshold. Imports not gathered by the business survey are estimated following the principles described under 1.4. For thoroughly capturing trade with Non-EU countries, a survey within the scope of the SBS has to be conducted every five years.

6.62. *Supplementary compilations.* Besides information from public institutions on cross-border government services (Austrian Development Agency, Federal Ministry of Finance, Austrian Foreign Ministry, Austrian Chamber of Commerce) the general enterprise survey is supplemented by a separate compilation among 120 non-profit organizations. Information is gathered on aid deliveries (goods) and aid payments (current transfers) as well as international aid services such as education and health services.

6.63. The OeNB, in turn, conducts the surveys among the financial sector, mainly banks and insurance companies, which relate to divisions 64 and 65 of ÖNACE 2008. The report on service exports and imports by Austrian banks as well as imports by insurance companies

mirrors the enterprise report run by Statistics Austria and covers all EBOPS items. In addition, the OeNB makes use of administrative data from the Financial Market Authority (FMA) on insurance service exports in particular. These data are reported for supervisory purposes according to EU Regulation (Commission Regulation (EC) No 1225/1999 of 27 May 1999 concerning the definitions of characteristics for insurance service statistics). Quarterly data are reported to the OeNB on premiums and claims from insurance service exports in all direct insurance divisions as well as from reinsurance. Yearly data include financial claims and liabilities from insurance transactions and insurance technical reserves. Besides direct insurance exports, FMA also gathers mirror data from other EU countries on insurance service imports in Austria. These data become available only with some delay, but they are especially important for the calculation of life insurance imports.

B.1.c. County experience: Germany

6.64. The Balance of Payments (BOP) in Germany is currently the primary data source for international trade in services. The collection method applied to collect the relevant data has been developed over decades and is embedded in the overall BOP collection system. The core element of this system builds a direct reporting system which can be best described for services as a cut off survey. The current cut off threshold is 12,500 € per transaction. The threshold indicates that the survey is not enterprise but transaction orientated. As a consequence, in Germany every enterprise (financial or non-financial) and public authority¹²¹ is obliged to report all of its service related transactions to the Bundesbank if the respective value is above the aforementioned threshold. The report must be submitted monthly, 7 days after the end of the reporting month.¹²²

6.65. Although the German reporting system is still described in some publications as an open ITRS, the fact is that it has departed from the settlement approach many years ago. Today it bears more characteristics of a survey system because it is mainly focused on enterprises and transactions. The transformation process started when the Deutsche Bundesbank foster direct reporting by electronic means which was in most cases accompanied by reporting of aggregated transactions out of the accounting of the enterprises. This process has not yet come to an end; however, with the changeover to BPM6 and the introduction of a full direct electronic reporting a major step towards a survey system¹²³ is taken.

6.66. All respondents¹²⁴ have to report their transaction with non-residents via an (electronic) form which is part of the annex of Foreign Trade and Payments Regulation. This regulation is a major building block of the overall national legal framework of the Balance of Payments. The form itself is designed as a generic “questionnaire”, allowing reporters to transmit all their transactions (from services through secondary income, direct investment to other investment) with one single form.

¹²¹ In general also individuals are obliged to report (like members of non-incorporated enterprises). However, in the case of services this group is negligible.

¹²² The system is supplemented by a household survey with regard to travel expenditures to avoid any data gaps as most of these transactions are below the threshold of 12.500 Euro.

¹²³ In line with the description given in Chapter 8 paragraph 2: “...survey systems are based on reporting by selected entities mainly on international transactions”.

¹²⁴ As mentioned in paragraph 1, a respondent or “selected entity” is every transactor of the target population (everybody in Germany, because everybody could have at any time a transaction with a non-resident) with a transaction above the threshold.

6.67. In the case of services this single form is used to collect the necessary information needed to publish all EBOPS items relevant in Germany with a breakdown by partner country. As it can be seen from the copy above, the core elements of this generic form are three characteristics, the transaction code, the (partner) country and the value of the transaction (incoming or outgoing). It is obvious that filling out this kind of questionnaire is not always straight forward. Additional instructions are necessary to explain to the reporting entities the usage of the form. The Deutsche Bundesbank therefore provides a wide range of information material on its webpage related to external sector statistics.¹²⁵

6.68. The most important source of information for the respondents is the explanatory note on the so called *coding list*¹²⁶ for balance of payments statistics. This electronically free of charge available brochure is prepared to assist reporting agents to correctly identify their international transactions. The note describes for each code which kind of transactions should be included and explains differences between codes with related contents where necessary. The note is structured along the broad categories of the BOP-Manual. The service chapter is divided in eight subcategories with around 85 codes in total. The description about the content of each code is formulated in way to be easily understandable for staff members of respondents who are usually not familiar with the BOP terminology.

6.69. To help reporting agents to switch from previous codes to the codes in use a conversion table is provided in the Annex of the Notes. The Annex also includes an index of key terms that can be used to quickly assign a transaction to its corresponding code. For the purposes of clarifying what is covered by individual codes, also a list of codes is provided, referring the reader to the pages containing the relevant explanations. Beside the Explanatory Notes reporters can download all other coding lists needed to fulfil their obligations (such as the coding list for partner countries). Furthermore, additional material is provided to explain complex cases for instance insurance transactions.

6.70. From the feedback received from reporting agents it can be concluded that especially the notes are considered as a very useful self-explaining tool to accurately categorize their transactions. The Bundesbank in turn seeks to improve this tool regularly by suggestions of the industry made in the context of bilateral contacts. The aim is to make it as user friendly as possible.

6.71. Although a few other forms are also used to collect data on services and other items of the BOP, all of them follow the generic approach, e.g. asking codes instead of questions. The experience made in the last decades with this generic service survey was in general positive. Respondents generally appreciate the fact that they not have to use different questionnaires for different service items. Transactions can be reported as they occur (legal service provided by a non-resident followed by an export of transportation services etc.). In addition, the basically stable format over years keep costs for providing the information low as changes in the requested breakdowns are usually made by adding new codes which can be implemented quite easily in their reporting system.

6.72. From the viewpoint of a compiler the “one fits all” approach results in a smooth and stable reporting over time. As the basic principles of collecting information don’t change much over time reporters, even if they have to report international service transaction only

¹²⁵http://www.bundesbank.de/Navigation/EN/Service/Reporting_systems/External_sector/external_sector_statistics.html.

¹²⁶ The coding list itself is part of the Foreign Trade and Payments Act.

sporadic, are well aware about the way providing the information. So the efforts to be made by the compiler to answer questions associated with the filling out of the questionnaire can be limited. Furthermore, all reports can basically be handled in the same way in regard to entering, processing and checking the data. Changes in the requested details - like it is the case with the introduction of BPM6 - can be implemented relatively easily from the legal point of view (it is just a change of the code list) and in the view of reporting burdens, as new questionnaires and therefore cost intensive changes in computer systems can be avoided.

B.1.d. County experience: Poland

6.73. The Polish survey *International Trade in Services* (ITS) complies with Regulation (EC) No 184/2005 of The European Parliament and of The Council of 12 January 2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment. The survey data are calculated according to the requirements of Manual on statistics of international trade in services (MSITS) and Balance of Payments Manual (BPM). The survey has been run by Central Statistical Office (CSO), in association with National Bank of Poland, since 2009. Data concerning transactions between residents and non-residents are collected in two different survey frequencies, quarterly and annually, which allow covering almost the entire population of enterprises engaging in the surveyed domain.

6.74. All enterprises engaged in ITS are obliged to report the value of acquired and/or provided services per partner-country, regardless of their economic activities or number of employed persons. The criterion for the selection of the company to the quarterly sample frame survey is the value of annual revenues or expenditures from international trade in services in case of: (i) provided services revenues must exceed 800,000 PLN (approx. 247,000 USD) and (ii) acquired services – expenditures must exceed 1,000,000 PLN (approx. 308,500 USD).

6.75. If company's revenues and expenditures from ITS are below the above-mentioned thresholds, the company submits the annual questionnaire. Enterprises are obliged to report their data electronically via statistical reporting portal. Only enterprises with number of employees below and equal to 5 can report their data by means of paper questionnaire.

6.76. Data are collected on the basis of EBOPS at the lowest kind of services from all major services groups. Moreover information about transactions between residents and non-residents are recorded by trading partner-country or international organization. Quarterly under-threshold estimated values are replaced by annual data which are disaggregated into quarters on basis of the quarterly services structure. The quarterly shares are calculated at the lowest level of services aggregation separately for revenues and expenditures. In case of non-response and for under-thresholds units grossing up is performed at the lowest level of service classification and partner country broken down by region, separately for revenues and expenditures.

6.77. SITS are disseminated by two national organizations: CSO and National Bank of Poland. National Bank of Poland disseminates SITS data as part of national balance of payments with the following frequencies: (i) monthly - 45 days after the month to which data relate only for total services (revenues and expenditures) from international trade in services, (ii) quarterly – 90 days after the reporting quarter for more detailed services transactions. Annual data are not issued (quarterly data are revised on the basis of data

collected in annual survey of international trade in services). In the balance of payments no information about partner-countries or geographical structure are issued.

6.78. SITS data have been also disseminated by CSO in *Yearbook of Foreign Trade Statistics of Poland* since 2011. In the yearbook the information about value and structure of provided and acquired services per kind of services and partner-country or group of countries (UE, OECD) are available. The yearbook is issued by the end of October of the year following the reporting year.¹²⁷

B.2. Incorporating mode-of-supply data in generic trade in services survey

6.79. *Introduction.* It is useful to identify the mode of supply in resident/non-resident transactions, as a first step to develop of more comprehensive mode of supply data. In generic trade in service surveys, compilers can request their resident respondents to classify each category of trade in service transactions into three modes of supply:

- i. service is supplied from one country to another without the supplier or consumer leaving their home countries (mode 1, cross-border supply);
- ii. service is supplied when an overseas customer temporarily travels to the country of the service provider to receive the service (mode 2, consumption abroad);
- iii. service is supplied when a representative of the service provider temporarily travels overseas to provide the service (mode 4, presence of natural person).

6.80. Because generic trade in service surveys focus on resident/non-resident transactions, services supplied under mode 3, commercial presence, cannot be captured in such surveys, to the exception of a small part of construction services when the company is a small temporary office or construction site for the duration of it, or the services are rendered through its sales network of sales offices abroad (See the experience of Spain in Chapter 14 C). Thus, the information obtained from generic trade in service surveys should be supplemented by the information obtained from FATS surveys (see Chapter 6 G).

6.81. It is important to note here the case of intra-corporate transferees. While the presence and movement of foreign staff are covered by mode 4 commitments, the supply of the service involving intra-corporate transferees is actually taking place through mode 3 (the mode 4 commitment enables the presence of the person in order for the service supplier to supply the service via mode 3).¹²⁸ Relevant information on the presence or movement of intra-corporate transferees could be derived from migration statistics, as intra-corporate transferees and other foreign employees maintaining an employer-employee relationship with the affiliated entity in the host country fall largely within the migrant categories.¹²⁹

6.82. Good practices in incorporating mode-of-supply data in generic trade in services survey include:

¹²⁷ The last edition of the yearbook is available on the following website: http://www.stat.gov.pl/cps/rde/xbcr/gus/RS_rocznik_statystyczny_handlu_zagranicznego_2012.pdf.

¹²⁸ MSITS 2010, paragraph 5.27.

¹²⁹ Ibid., paragraph 5.101.

- i. When compiling modes of supply data it is important to consider whether there is a policy need for such information;
- ii. Not all service categories and modes can be covered in such surveys as these surveys target enterprises rather than individuals so other sources should be considered for modes 2 and 4; data on mode 3 are compiled as part of FATS;
- iii. Focus surveys on exports of services as this might be the primary interest to users, imports of services by mode might be the done in the second stage of the survey development;
- iv. The explanatory notes are very important – the respondents need to be given a clear and simple instructions how to determine the modes of supply. For example, it should be explained that each service has to be assigned either to a predominantly or, if there is no dominant mode, the most important mode of supply;
- v. The respondents would be more comfortable estimating proportions of the value already provided, rather than giving us exact monetary values by mode of supply
- vi. Imputations should be part of the work while processing survey results using table 5.2 of MSITS 2010 as the basis (for lower value answers) or should be done based on the information obtained from the respondent after calling them for clarification (for higher value answers) – experience shows that respondents are very likely be able to provide mode of supply information when contacted directly;
- vii. Use prompts and restrictions in the survey design, as this should help improve the accuracy of data reported. For example, asking the respondent to confirm their answer if they enter a mode of supply that is unlikely to be associated with a particular service type.

B.2.a. Country experience: New Zealand - Collecting data on modes of supply

6.83. Most of New Zealand’s services data comes from surveys. Modes of supply data (for exports) was collected directly through 2011 Census of International Trade in Services and Royalties, which collects data on 55 different service types excluding transportation, travel, insurance, and government services. Respondents were asked to estimate the proportion of their services exports that were delivered through mode 1, mode 2, or mode 4. Further detail around how the Census collected this information can be found in chapter 14 C.

6.84. The 2011 Census of International Trade in Services and Royalties was run as a joint collection along with the Ministry of Foreign Affairs and Trade (MFAT), who contributed funds towards the project. Modes of supply data was only collected for exports of services, as this was the area that MFAT were most interested in. Running the survey as a joint collection also meant that MFAT had access to (cleaned) unit-record data (although data used or released remains subject to confidentiality constraints as stated in New Zealand’s Statistics Act 1975).

6.85. A detailed guide accompanied the Census to provide further help, along with examples.

6.86. Respondents were asked to report their services exports in the upper sections of the survey, and then asked to estimate the percentage of the value that was delivered through mode 1, mode 2, and mode 4. It was felt that the respondents would be more comfortable estimating proportions of the value already provided, rather than giving us exact monetary values by mode of supply – fewer respondents should leave this section blank this way. Testing showed that most respondents understood the modes of supply concepts, although feedback suggested the guide was helpful as well.

6.87. Where the respondent didn't specify a mode of supply in their returned questionnaire we either imputed the most likely mode of supply based on Table 5.2 in *MSITS 2010* (for lower value answers) or called the respondent for clarification (for higher value answers). Respondents were always able to provide mode of supply information when contacted directly.

6.88. Census results were compared with a list of assumptions provided by MFAT prior to running the survey. These assumptions had been put together based on trade negotiator experience combined with Table 5.2 in *MSITS 2010*.

6.89. In the future New Zealand is planning to use internet based surveys to collect services data. Such surveys will be easier to link into the compilation databases, as well as being a lot to cheaper to run once they have been set up. Prompts and restrictions can also be included in the survey design, which should help improve the accuracy of data reported. For example, asking the respondent to confirm their answer if they enter a mode of supply that is unlikely to be associated with a particular service type.

6.90. Additional modes of supply data (for services types not collected in the census) were estimated using Table 5.2 in *MSITS 2010*. For example, travel services were assumed to be mode 2 services trade, passenger transportation services and insurance services were assumed to be mode 1. Assumptions in Table 5.2 closely match anecdotal evidence from trade negotiations compiled by our Ministry of Foreign Affairs and Trade for all service types.

6.91. For policy reasons, New Zealand's Ministry of Foreign Affairs and Trade was mainly interested in exports of services, which is why only exports data was collected for modes of supply. However, modes of supply information could be compiled for imports of services in the same way.

6.92. It is important to use your judgement and knowledge of your own country's situation when estimating modes of supply by service type. The New Zealand's film industry can be used as an example. Table 5.2 in *MSITS 2010* suggests that personal, cultural, and recreational services be allocated to a mixture of modes 1 and 4. However, in New Zealand's case an American company will often set up a temporary subsidiary in New Zealand, whose sole purpose is to receive film production services (and has no other activity or presence). If we consider the American subsidiary to be a non-resident company we could consider this to be mode 2 exports of services (the American company, has moved to New Zealand to receive a service).

6.93. From New Zealand's point of view, IT has a role to play in all aspects of data collection, not just within the modes of supply framework. The International Visitors Survey (used to estimate exports of travel services) is moving to an online collection format, while New Zealand also has plans to move our trade in services survey online. IT expertise will be

required to make sure these data collection systems can be linked to data collation and dissemination systems.

6.94. New Zealand has not attempted to collect imports of services through mode 3. However, we have compiled some inward FATS data. This involved identifying foreign affiliates operating in New Zealand and then matching these enterprise numbers to existing business surveys and administrative data sets. Future projects could involve making estimates for this using firm's turnover figures and making assumptions on the proportion of this that relates to providing services to New Zealand customers.

6.95. New Zealand is yet to compile any work on outward FATS, or the mode 3 exports of services that relate to this. However, if Statistical agencies compiled detailed inward FATS data, as well as imports of service through mode 3, data could be shared amongst major trading partners to form a picture of outward FATS or exports of services through mode 3. For example, if Australia records mode 3 imports of services from New Zealand this figure would also represent New Zealand's exports of services through mode 3 to Australia.

6.96. When compiling modes of supply data it is important to consider whether there is a policy need for such information. Data shouldn't be compiled just because the manual recommends it.

B.2.b. Country experience: Spain - Collecting data on modes of supply

6.97. The Survey of International Trade in Services (ECIS) produced quarterly by the National Statistics Institute (INE) has as its main objective to serve as a primary statistical source for estimating the heading "Other services" of the balance of payments compiled by the Bank of Spain. ECIS therefore follows the approach of the balance of payments and estimate is only service transactions between residents and non-residents. The ECIS has included for the first time in 2013, the variable mode of service delivery in the questionnaire, despite not being a variable of interest to the balance of payments.

6.98. The main reason for inclusion in the survey was the full adaptation of MSITS 2010. Other reasons have been the interest of national and international users (mainly international) in the face of multilateral and bilateral trade negotiations.

6.99. The survey followed the principles set forth in MSITS 2010. In addition to ease the burden of reporting statistical as possible in a survey and is itself very complex, we have tried to facilitate the feasibility of obtaining supply as the simplest form possible and based on the simplifying assumption collected in paragraph 5.34. In short: each service is assigned either to a predominantly or, if there is no dominant mode, the most important mode of supply.

6.100. For the table corresponding to the service EXPORTS tells the informant in the ECIS the following regarding mode of delivery:

Service delivery mode exported: ONLY IN THE CASE OF THE SERVICES, mark with a cross (X) the main supply so that your company has used in the delivery of each of the services exported in terms of time or resources involved, according to the following classification:

i. *Outside border supply:* The service is delivered from Spain to the foreign country, with the supplier and the recipient of service remaining in their respective countries. Only service crosses the border. The service can be provided by phone, fax, e-mail, regular mail, Internet, or in any way involving physical or electronic cross-border movement of service. It is the way of supplying services internationally more common among residents and non-residents.

ii. *Consumption in Spain:* The service is available in Spain and is the resident or client property or assets owned by those who move to Spain to receive the service. Tourist services (outside the scope of the survey), processing services or prosecution in Spain of real property business customers non-residents, maintenance and repair services, some supporting and auxiliary services provided at ports transport, Spanish airports or stations, transportation of waste for treatment in Spain and some government services not included in other items provided by Spanish public bodies both in Spain and abroad, are good examples.

iii. *Commercial presence abroad:* The service is provided by your company in the country of non-resident client through subsidiaries / branches or representative offices or selling your company located in the customer's country. This mode of supply would generally outside the scope of the survey (see point 4. Exclusions paragraph Survey Definitions and concepts) but is seen as the exception to the provision of certain services such as construction abroad when your company is a small temporary office or construction site for the duration of it, or the services are rendered through its sales network of sales offices abroad do not have the status of subsidiary or branch.

iv. *Presence of natural persons abroad:* The service is provided through the temporary movement indefinitely and paid staff resident in Spain your company to the country of the client, or yourself if it is a freelancer (self) resident in Spain, and has been hired by the non-resident client for the service for less than one year.

6.101. For exports of services requested in the questionnaire dominant delivery mode for transactions by type of service at the most disaggregated of EBOPS 2010 and counterpart country. For the table corresponding to the service IMPORTS tells the informant in the questionnaire ECIS following regarding mode of delivery:

6.102. Mode of delivery of imported service: ONLY IN THE CASE OF THE SERVICES, mark with a cross (X) main supply mode by which your company has received each of the imported services in terms of time or resources involved, according to the following classification:

i. *Cross border to Spain:* The service is provided from the foreign country to your business in Spain, with its non-resident provider and service receiver in your business remaining in their respective countries. Only service crosses the border. The service can be provided by phone, fax, e-mail, regular mail, Internet, or in any way involving physical or electronic cross-border movement of service. Mode is the most common service delivery between residents and non-residents. Purchases of goods for merchanting can be included in this mode.

ii. *Consumption abroad:* The service is provided in the country of non-resident supplier and the customer, in this case your company, or the property or assets owned

by your company, those who move to the country to get the service provider. Tourist services (outside the scope of the survey), transformation services or overseas processing of goods owned by your company, the maintenance and repair services, some supporting and auxiliary services to transportation received at ports, airports or stations foreign transportation of wastes for treatment abroad and some government services not included in other items provided by foreign government agencies or international organizations located in Spain or abroad, are good examples.

iii. *Commercial presence in Spain:* The service is delivered to your business in Spain through subsidiaries / branches or representative offices or sale of its non-resident service provider located in Spain. This mode of supply would generally be outside the scope of the survey (see point 4. Exclusions paragraph Survey Definitions and concepts) but is seen as the exception to the receipt of certain services such as construction in Spain when non-resident company is a small contracted or temporary office on the site of the work in Spain during the duration thereof, or services that are received by your company through the sales network of sales offices non-resident companies have in Spain and do not have the status of subsidiary or branch.

iv. *Presence of natural persons in Spain:* The service is provided through the temporary movement to your business in Spain paid staff not resident in Spain for your service provider indefinitely, or independent professionals (freelance) not resident in Spain hired by your company to provide the service for less than one year.

6.103. The questionnaire requests the dominant delivery mode for transactions by type of service at the most disaggregated of EBOPS 2010 and counterpart country.

B.2.c. Country experience: Hong Kong, China - Collecting data on modes of supply

6.104. Hong Kong-China has adopted a comprehensive approach by including in its annual survey of imports and exports of services questions on the share of mode 4 for each services item where the MSITS 2002 had identified that this mode of supply was deemed relevant (legal, accounting, computer, audio-visual, real estate services etc.). This follows the idea that estimating mode 4 is the key to develop statistics on the international supply of services by mode. This is done for exports and imports for 18 selected services items (+3 "other" where respondents can specify services not covered in the standard list of the form).

6.105. The question asked is on the value of receipts/payments included in each relevant item that are charged for sending/receiving responsible person(s) outside/in Hong Kong-China for a short period to provide services. As for each service item, a breakdown into the five main partner countries/territories is asked in percentage shares. Respondents may provide additional partner countries/territories to ensure the percentage shares add up to 100%. The information on the services payments and receipts which corresponded to charges for sending responsible persons for delivering the service is obtained for the Hong Kong Census and Statistics Department's internal study on the feasibility of compiling Hong Kong-China's trade in services analysed by mode of supply.

B.3. Transportation surveys

6.106. Enterprise and establishment surveys of resident and non-resident carriers are the main sources to collect transport services data for several countries. These surveys could be elaborated enough to cover most of EBOPS categories related to transport services.

6.107. EBOPS 2010 follows BPM6 in recommending a cross-classification of transport by mode of transport and by kind of service. While BPM6 recommends the identification of three mode of transport, namely, sea, air and other, EBOPS 2010 distinguishes 8 modes of transport, namely, sea, air, space, rail, road, internal waterway, pipeline and electricity transmission. EBOPS 2010 also identifies other supporting and auxiliary transport services as well as postal and courier services. EBOPS 2010 recommends the same classification of kind of services as BPM6, namely transport of passengers, transport of freight, and other which includes other supporting and auxiliary services and postal and courier services. Such classification should be incorporated in the form of transportation service surveys, as necessary.

6.108. Transportation service surveys should be sent to carriers of each category of mode. Exports are identified in resident carriers' activities, while imports are identified in non-residents' carriers' activities. Compilers may face difficulties in getting a representative coverage of the non-resident carriers' activities. However, when transport is regulated in a country (air transportation being the best example), non-resident carriers have to be registered to operate and they typically establish branches or agents in that country. Thus, compilers could send survey questionnaires to those branches/agents.

6.109. A number of users, in particular for GATS information purposes, would need additional information on the value of freight transport services provided by residents to non-residents and vice versa, as a complement to the freight transport data compiled according to the f.o.b. or c.i.f. valuation principles for goods. This information is useful because it represents the actual market transactions as they occur, with no correction, adjustment or estimation. In this case, the transport service is recorded if, and only if, a transaction in transport services occurs between a resident and a non-resident. The recording of the separate transport service depends on the delivery terms that are specified in the contract for the sale or purchase of the goods and realized in the market transaction. Generally, this transaction information is collected by many national compilers (that is, before any adjustment required to comply with f.o.b. valuation of goods). It is then adjusted to comply with balance of payments principles. Compilers are encouraged to make this information publicly available, given its analytical interest, although *MSITS 2010* does not include a recommendation in this regard.¹³⁰

B.3.a. Country experience: Japan

6.110. Japan collects data on international transport services through monthly international transport survey. All Japanese airline/shipping operators operate international transport services and branches or agents of foreign airline/shipping operators in Japan are obliged to report, under the relevant ministerial ordinance.

6.111. Information on revenues and expenses related to international transport activities are obtained through the survey. Japanese transport operators report freight revenues received from both residents and non-residents, and revenues and expenses associated to transport services received from/paid to non-residents. Branch or agent of foreign transport operators report revenues and expenses on transport associated services other than freight received from/paid to residents, on behalf of their head offices.

¹³⁰ MSITS 2010, paragraphs 3.107-3.110.

6.112. By collecting data through survey from the transport operators, transactions associated with transport are captured correctly and comprehensively, by each mode, and by type of service provided.

6.113. Details of the data collected through the survey are as follows. Freight revenues of Japanese transport operators are collected with the following breakdowns: a) freight on exports, b) freight on imports, and c) freight on cross trades. Each of them is collected with breakdown of freight received from residents and non-residents, in order to make cif/fob adjustment.¹³¹ Total freight revenue on exports and cross trade is recorded as export of freight service, and freight revenue on imports is used as a source data for estimating import of freight service.

6.114. Other information collected through the survey are, passenger fares revenues, revenues and expenses on leasing or chartering arrangements by form of contract, and other supporting and auxiliary transport services. Data other than freight services are reported both from Japanese transport operators, for which revenues earned from and expenses paid to non-residents, and from foreign operators, for which revenues earned from and expenses paid to residents (see figure 6.1).

6.115. The report forms used in the survey are available at the UNSD website.

B.3.b. Country experience: Chile

6.116. In Chile, the Central Bank (CBCH) has been responsible for international trade in services statistics, within the Balance of Payments framework. In particular, data on international transport services are collected through quarterly questionnaires reported to the CBCH by the sea and air international transport companies resident in the country and the agencies or representatives of foreign companies in Chile. The transportation questionnaires are prescribed by the “Compendium of International Exchange Regulations (CIER).” The CIER is a reporting framework based on foreign exchange transactions.

6.117. The collection method in use stems from Bank’s past active involvement in foreign exchange regulations. After the liberalization of trade and capital flows, the CBCH has continued to compile international trade in service statistics based on foreign exchange transactions, but focused on its mandate in the area of statistics stipulated in the Bank’s Constitutional Organic Law of 1989. The mandate of compiling statistics mainly consists of balance of payments and financial statistics as well as national accounts, and other macroeconomic statistics.

¹³¹ See chapter 14, *CIF/FOB adjustments*, beginning at paragraph 14.56.

Figure 6.1
Data collected through international transport survey

[Survey for aviation companies]		[Survey for marine transport enterprises]	
	Items		Items
Revenues	(1) Freight revenue on merchandise trade	Reported only from Japanese transport operators	(1) Freight revenue on merchandise trade
	(a) Freight revenue earned for merchandise export from Japan		(a) Freight revenue earned for merchandise export from Japan
	(b) Freight revenue earned for merchandise imported into Japan		(b) Freight revenue earned for merchandise imported into Japan
	(c) Freight revenue earned for cross trade		(c) Freight revenue earned for cross trade
	(2) Passenger fares		(2) Passenger fares
	(3) Fare of interline transportation		(3) Charter hire and space leasing revenues from nonresidents
	(4) Aircraft leasing revenues		(a) Charter of vessel without crew
	Of which		(b) Charter of vessel for cargo with crew
	revenues on financial leases (principal)		(c) Charter of vessel for passenger with crew
	revenues on financial leases (interests)		(4) All other revenues
(5) All other revenues	Commissions		
Expenses	(1) Transportation expenses	(1) Transportation expenses	
	(a) Repair and maintenance of transport equipment	(a) Fuel expenses	
	(b) Fuel expenses	(b) Other cost of transportation	
	(c) Agent fee	Harbor fees, canal tolls, and other official commissions	
	(d) Provisions and other non-fuel goods purchased at the port	(2) Vessel expenses	
	(e) Insurance premium for aircrafts and equipments	(a) Personnel expenses and crew expenses	
	(f) Others	Wages to foreign crew members	
	Wages to foreign boarding staff	(b) Insurance premium	
	Port charges, taxes, and landing fees, etc.	(c) Repair and maintenance of transport equipment	
	(2) Fare of interline transportation	(d) Purchase of stores and supplies	
	(3) Settlement of fare	(e) Others	
	(4) Aircraft leasing expenses	(3) Charter hire and space leasing payments to nonresidents	
	Of which	(a) Charter of vessel without crew	
	financial leases expenses (principal)	(b) Charter of vessel for cargo with crew	
	financial leases expenses (interests)	(c) Charter of vessel for passenger with crew	
	(5) All other expenses	(4) All other expenses	
	Cost of trainees and general management fee	General and administrative expenses	

6.118. The response to transportation questionnaires is mandatory and data are directly reported in US dollars. The instructions to complete the questionnaires and forms are set out in the chapter VIII, annex 1.1 and 1.2 of the CIER and are available on the CBCH website.¹³²

¹³² Central Bank of Chile. <http://www.bcentral.cl/normativa/cambio-internacional/manual-procedimiento/pdf/capviiiianexo1.pdf>.

The questionnaire has to be submitted by the companies to the CBCH according to the schedule shown in table 6.1.

Table 6.1
Schedule of deliveries of information

Quarter	Deadline to submit the form	Lag
1 st Quarter	May	60 days
2 nd Quarter	August	
3 rd Quarter	November	
4 th Quarter	March (next year)	90 days

6.119. Under this schedule, each quarterly publication of the balance of payments includes a preliminary estimate of transport services, based, among other components, in an econometric model that includes relevant industry variables. In the following quarter, once information of CIER is received and validated, the estimated transport services figures are replaced by the final value reported in the questionnaires of the CIER.

6.120. There are two types of questionnaires. One is addressed to Chilean resident companies and another is addressed to agencies or representatives of foreign companies in Chile. In both types of questionnaires, the information requested to the transportation companies covers all acts or conventions that create, modify or extinguish obligations payable in foreign currency. In general, transport services accompanying settlements in foreign currency are distinguishable in resident companies' commercial accounting as it distinguishes revenues and expenses in foreign currency from those in national currency for income statement purposes companies. In the case of agencies or representatives of foreign companies, their purchases' books or expenses' books distinguish transport services accompanying settlements in foreign currency.

6.121. In each form, the first block of information includes general backgrounds which are used to identify the enterprises, reporting period, and the name of the responsible of the information. The last information is very useful for the CBCH in keep contacts with respondents. The respondents can be consulted about the reported data, e.g., the contents of transactions, as well as possible errors or missing data. The respondents can always contact with the CBCH analysts for clarifications.

6.122. The second section of each form inquires about incomes and expenses related to international transport business. Most of the information collected in this section is used in estimating transport services. The agencies or representatives report the information of non-residents companies on their behalf.

6.123. Information of the second section is also used to estimate other services categories. For example, rentals of transportation equipment without crew or major repairs abroad are used to estimate "operational leasing services" in "other business services" and "repair of goods", respectively.

6.124. Additional information on Chilean experience, including on various reports on transactions by transportation companies is available at the UNSD website.

B.4. *Manufacturing services surveys*

6.125. Enterprises in one economy may produce their goods that involve manufacturing services from other economies. This kind of outward processing arrangement aims to achieve lower production cost, better supply of raw materials and access to specialized production facilities, skills and knowhow that are not cost effectively available in the residing economy. Manufacturing services on physical inputs owned by others (or manufacturing services in short) include activities such as processing, assembly, labelling and packing that are undertaken by enterprises without ownership of the goods. Global and regional production arrangements have been much facilitated by the improved convenience of transport and communications as well as favourable trade policies and bilateral/multilateral agreements (e.g. tariff-free on raw materials possessed by non-residents sent for goods processing in the economy).

B.4.a. *Imports of manufacturing services*

6.126. Processors charge manufacturing services on goods owned by others on a fee basis. For imports of manufacturing services, a survey is conducted to collect data from owners of the goods on the processing fee charged by non-resident processors, which may incur cost of materials procured by the processors for use in the production. In addition, data on the costs and origins of materials supplied by the resident enterprises (owners) to the non-resident enterprises (processors) for outward processing should also be collected. This covers both cases where owners' materials are sent to the processor's economy directly from a third economy and from the owners' home economy.

6.127. Goods sent abroad for processing may be returned wholly or partially to the economy of the owners of the goods for domestic consumption and/or exports to other economies, or sold offshore directly to the economy of the processors or other economies.¹³³

6.128. Import declarations sourced from the customs authorities and relating to goods under processing can help identify enterprises involved in processing activities. The identified enterprises can then be surveyed to collect various components of goods involved in outward processing.

6.129. For processed goods that are sold offshore by the resident owners, another survey covering merchanting activities should be conducted to collect the sales values and various cost components of the goods since such transactions with non-residents are completed offshore and cannot be captured by import/export declarations.

6.130. The following text and figure 6.2 show the plausible movements of materials and goods involved in outward processing arrangement related to imports of manufacturing services.

6.131. Movements of materials/goods relating to outward processing

Materials to the processor (Enterprise C₁) for processing:

¹³³Under some circumstances such as order cancellation and surplus materials after production, resident enterprises may sell offshore the materials they own that are originally sent for outward processing. The offshore sale of such materials is virtually a kind of merchanting activities undertaken by resident enterprises.

(1) Supplied by the owner (Enterprise A₁) itself, including those acquired by the owner from Enterprise A₂ domestically (Economy A) (no international transaction)

(2a) Acquired and supplied by the owner (Enterprise A₁) from Enterprise B in a third economy (Economy B) (imports of goods from Economy B by the owner (Enterprise A₁))

(2b) Acquired and supplied by the owner (Enterprise A₁) from Enterprise C₂ in the processor's economy (Economy C) (imports of goods from Economy C by the owner (Enterprise A₁))

(3a) Procured by the processor (Enterprise C₁) from Enterprise B in a third economy (Economy B) (imports of goods from Economy B by the processor (Enterprise C₁))

(3b) Procured by the processor (Enterprise C₁) from Enterprise C₂ domestically (Economy C) (no international transaction, with the required cost to be charged under manufacturing services)

Goods dispatched after processing:

(4) Returned to the owner (Enterprise A₁)

*Sales of processed goods by the owner (Enterprise A₁) with **change of ownership**:*

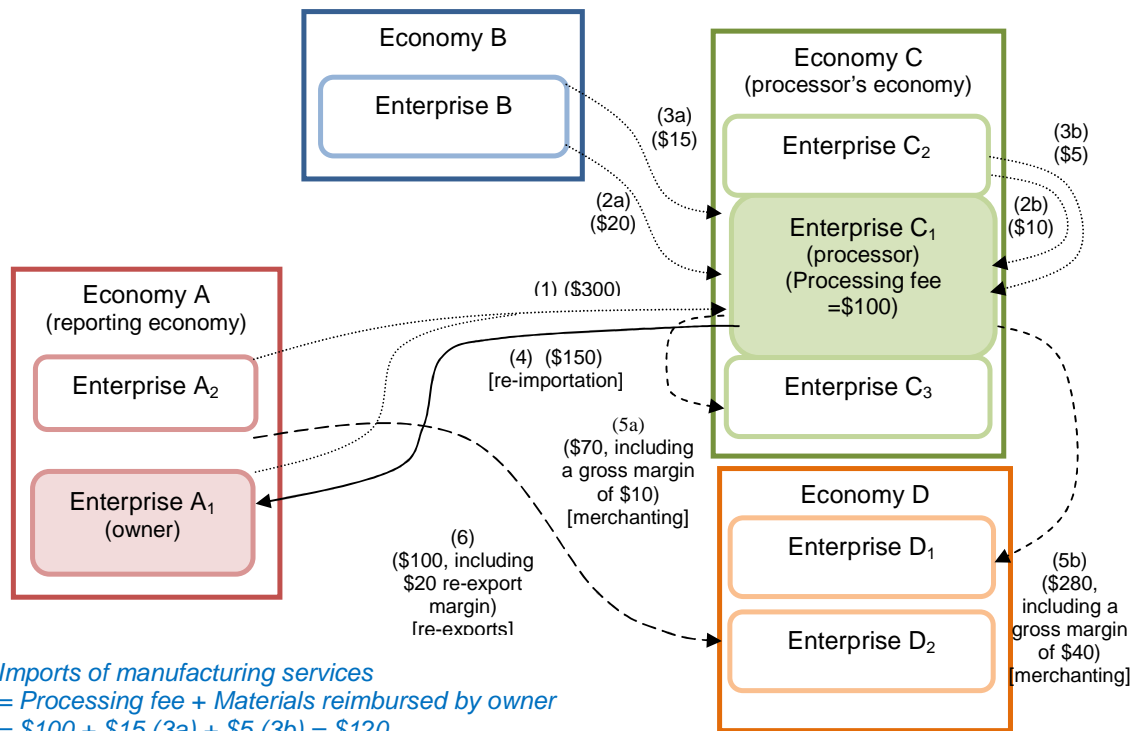
(5a) Sold offshore directly to Enterprise C₃ in the processor's economy (Economy C) (exports of goods to Economy C by the owner (Enterprise A₁))

(5b) Sold offshore directly to Enterprise D₁ in a third economy (Economy D) **(exports of goods to Economy D by the owner (Enterprise A₁))**

(6) Exported to Enterprise D₂ in a third economy (Economy D) after (4) above (exports of goods to Economy D by the owner (Enterprise A₁))

[Note: (6) is exports of goods only. The manufacturing services involved have been recorded in (4).]

Figure 6.2
Imports of manufacturing services and related activities



Imports of manufacturing services
 = Processing fee + Materials reimbursed by owner
 = \$100 + \$15 (3a) + \$5 (3b) = \$120
Value of goods before processing
 = \$300 (1) + \$20 (2a) + \$10 (2b) = \$330
Value of goods after processing (excluding gross margin)
 = \$150 (4) + \$60 (5a) + \$240 (5b) = \$450

B.4.b. Exports of manufacturing services

6.132. For exports of manufacturing services on goods owned by non-residents, the data collection confines to the processing fee as well as the costs and origins of materials procured by the resident processors for manufacturing. The survey excludes manufacturing on the processors' own account and that for other resident. The following text and figure 6.3 show the plausible movements of materials and goods involved in inward processing arrangement related to exports of manufacturing services:

6.133. Movements of materials/goods relating to inward processing

Materials to the processor (Enterprise A₁) for processing:

(1) Supplied by the owner (Enterprise C₁), including those acquired by the owner from Enterprise C₂ domestically (Economy C) (no international transaction)

(2a) Acquired and supplied by the owner (Enterprise C₁) from Enterprise B in a third economy (Economy B) (imports of goods from Economy B by the owner (Enterprise C₁))

(2b) Acquired and supplied by the owner (Enterprise C₁) from Enterprise A₂ in the processor's economy (Economy A) (imports of goods from Economy A by the owner (Enterprise C₁))

(3a) Procured by the processor (Enterprise A₁) from Enterprise B in a third economy (Economy B) (imports of goods from Economy B by the processor (Enterprise A₁))

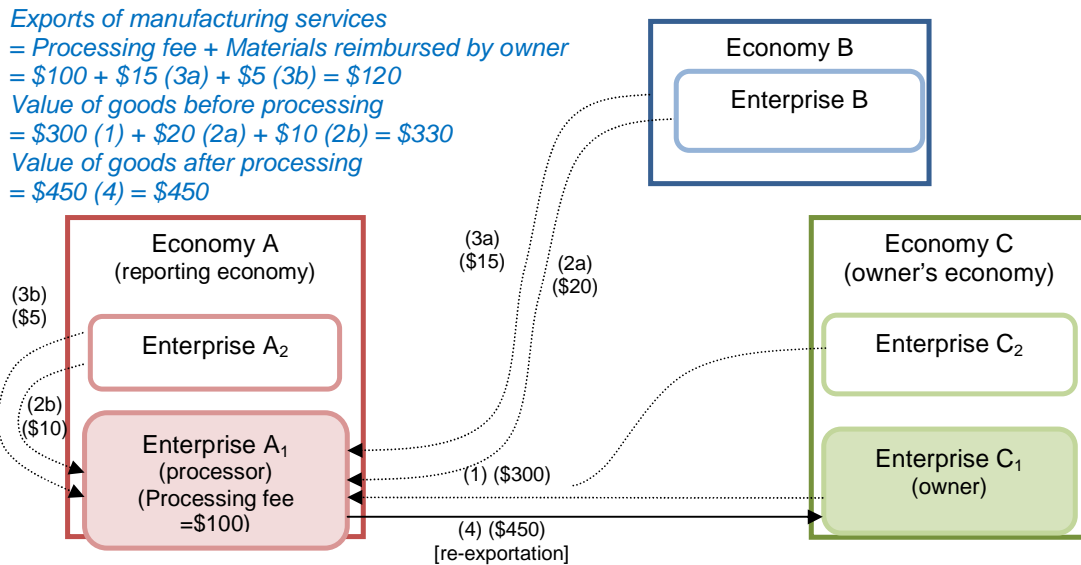
(3b) Procured by the processor (Enterprise A₁) from Enterprise A₂ domestically (Economy A) (no international transaction, with the required cost to be charged under manufacturing services)

Goods dispatched after processing:

(4) Returned to the owner (Enterprise C₁)

[Note: To the reporting economy (Economy A) in this case of inward processing, only the exports of manufacturing services by the processor (Enterprise A₁) to the owner's economy (Economy C) is relevant. The owner (Enterprise C₁) may sell offshore directly the processed goods or, after the return of these goods, export them to another economy with change of ownership on the owner's account, which are not relevant to the processor and thus the reporting economy.]

Figure 6.3
Exports of manufacturing services and related activities



B.4.c. Country experience: Hong Kong, China

6.134. As early as in the 1980s, many manufacturing companies in Hong Kong started to relocate their production processes to Mainland China to take advantage of the geographical proximity and lower production cost there. Raw materials and semi-manufactures are supplied to factories in Mainland China for processing and the processed goods are returned to Hong Kong for local consumption and/or re-exportation. This kind of activity is regarded as outward processing.

6.135. On the other hand, Hong Kong traders also engage in a substantial amount of merchanting activities to take advantage of their extensive trading network with buyers and

sellers in the global market. In recent decades, along with the rapid infrastructural development in Mainland China, particularly ports and related transportation facilities, Hong Kong traders have diversified their export channels by selling offshore their goods processed in Mainland China directly to markets outside Hong Kong. This is referred to as offshore trade activities involving outward processing.

6.136. Hong Kong's outward processing activities are predominantly carried out in Mainland China. Such activities in places other than Mainland China have been relatively insignificant.

6.137. To support the collection of data on manufacturing services and related activities in Hong Kong, the monthly survey on trade involving outward processing in Mainland China (OPS) and the annual survey on imports and exports of services (ASIES) have been enhanced and a new quarterly survey on merchanting and other trading activities (QSMATA) has been launched to collect additional data.

Case I: Outward processing in Mainland China with processed goods returned to Hong Kong

6.138. In OPS, import/export declarations in respect of Hong Kong's trade with Mainland China are used as the unit of analysis of the survey. The declarations are categorized into non-overlapping strata for sampling purpose. They are first categorized by trade types (including domestic exports and re-exports to Mainland China, and imports from Mainland China) and then by commodity groups. The survey is conducted on a random sample of import/export declarations.

6.139. While basic information regarding the selected consignments (e.g. trade type and commodity type) can be derived from the declarations, the required information on outward processing is obtained through OPS. Categorized import/export declarations form the population of individual strata and a systematic random sample of declarations is selected for the survey. For cases pertaining to imports (from customs-based perspective) from Mainland China which involve outward processing of goods under "processing and assembling" arrangement, the following data are collected:

- i. Value of raw materials/semi-manufactures sent from Hong Kong to Mainland China;
- ii. Value and origin of raw materials/semi-manufactures purchased and delivered directly from places other than Hong Kong to Mainland China;
- iii. Value of manufacturing services on goods owned by Hong Kong, with the following breakdowns:
 - a. Processing fees paid by Hong Kong; and
 - b. Value of raw materials/semi-manufactures procured directly by Mainland China processors.

6.140. Regarding data collection in OPS, a significant proportion of respondents were logistics companies (rather than the owners of imported processed goods) which generally do not have readily available information pertaining to the additional data required. Considerable efforts have been made in establishing rapport with major logistics companies. These logistics companies can now either acquire the relevant information from the goods

owners themselves or provide the contact details of the goods owners for subsequent follow-up. This established practice has successfully reduced the non-response rate of logistics companies to a reasonably low level.

Case II: Offshore trade activities involving outward processing with processed goods sold offshore

6.141. Hong Kong takes part in a lot of merchanting activities. Companies in Hong Kong purchase goods from and then sell to non-residents without the goods ever entering and leaving Hong Kong. Some of such offshore trade activities involve outward processing in which goods owned by Hong Kong companies are processed under “processing and assembling” in Mainland China or similar arrangement in other processing economies before they are sold offshore directly to non-residents. These offshore trade activities cannot otherwise be collected from import/export declarations and are captured through ASIES and QSMTA.

6.142. In ASIES, offshore trade activities involving outward processing are distinguished from conventional merchanting activities for collecting the following data on manufacturing services and related activities from a systematic random sample of enterprises that are from non-overlapping strata formed by different industry sectors and classes of number of persons engaged:

- i. Sales value and cost of processed goods sold offshore by origin, destination and commodity group;
- ii. Value of raw materials/semi-manufactures sent from Hong Kong to the processor’s economy;
- iii. Value and origin of raw materials/semi-manufactures purchased and delivered directly from places other than Hong Kong to the processor’s economy;
- iv. Value of manufacturing services on goods owned by Hong Kong, with the following breakdowns:
 - a. Processing fees paid by Hong Kong; and
 - b. Raw materials/semi-manufactures procured directly by the processors abroad.

6.143. In addition to outward processing as described in Cases I and II above, the values and destinations of exports of manufacturing services on goods possessed by companies abroad relating to inward processing undertaken by Hong Kong are also collected in ASIES.

6.144. In order to support timely compilation of relevant macroeconomic aggregates (namely Balance of Payments and Gross Domestic Product estimates), the new survey QSMTA is conducted to collect similar data at quarterly intervals. To minimize respondent burden, breakdowns by destination and origin are only collected on an annual basis via ASIES.

B.5. Surveys on insurance and financial corporations

6.145. *Surveys on insurance corporations.* In order to obtain source data for insurance services, their exports in particular, conducting surveys on insurance corporations is very

useful. To ensure an appropriate coverage of the domestic insurance sector, a survey frame should be available including a list of insurance companies, which may be provided by the authority issuing the licenses for insurance business. Insurance agents and brokers are usually required to register with insurance authorities; therefore, a list of these businesses should be readily available from official sources. For imports of insurance services, compilers need to depend on general enterprises surveys for insurance premiums paid to and insurance claims received from foreign insurance corporations (see Chapter 14 B (vi)).

6.146. Regarding freight insurance, premiums payable on internationally traded goods before they reach the customs frontier of the economy of the exporter are included in the f.o.b. price of the goods. Freight insurance premiums payable subsequent to the departure of the goods from the customs frontier of the exporter's economy are treated as payable by the importer. This means that freight insurance services should be included in the compiling economy's balance of payments when they relate to exports of goods beyond the customs frontier of the compiling economy, and are supplied by resident insurers (credits), or relate to imports of goods to the compiling economy, beyond the customs frontier of the exporting economy, when they are provided by non-resident insurers (debits).

6.147. The export of freight insurance can be identified by surveys of insurance corporations, though small insurers or small lots of export might not be fully captured. In contrast, the import of freight insurance is often estimated from the price of imported goods, in conjunction with the estimation of transportation services (see Chapter 14. B (iii)).

B.5.a. Country experience: the United States

6.148. The main source of U.S. exports and imports of insurance services is a survey of U.S. insurance companies, "Quarterly Survey of Insurance Transactions by U.S. Insurance Companies with Foreign Persons (BE-45).¹³⁴ This survey, conducted by the Bureau of Economic Analysis (BEA), collects quarterly data on reinsurance premiums sold to and purchased from abroad and annual data on reinsurance claims paid and received, primary insurance premiums sold and claims paid, and auxiliary insurance services. For the quarterly survey, there is a reporting threshold. This form distinguishes transactions with foreign affiliates, transactions with foreign parent(s) and other members of affiliate foreign group, and transactions with unaffiliated foreign persons.

6.149. For the quarterly survey, filing is mandatory if, with respect to these transactions, any of the following eight items were greater than positive \$8,000,000 or less than negative \$8,000,000 for the previous calendar year or can expected to be in the current calendar year, on an accrual basis: (1) premiums earned, and (2) losses, on reinsurance assumed; (3) premiums incurred, and (4) losses, on reinsurance ceded; (5) premiums earned, and (6) losses, on primary insurance sold; (7) sales of, and (8) purchases of, auxiliary insurance services.

6.150. Every 5 years, BEA conducts a benchmark survey of insurance companies "Benchmark Survey of Insurance Transactions by U.S. Insurance Companies with Foreign Persons (BE-140)" to collect information on companies that fall below the reporting threshold on the quarterly survey.

¹³⁴ The entire forms can be retrieved from <http://www.bea.gov/surveys/iussurv.htm>.

6.151. To ensure complete coverage of imports of insurance services, BEA asks non-insurance companies in the United States to report premiums paid to and losses recovered from foreign insurers on another survey, "Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons." BEA conducts this survey quarterly and also as a benchmark survey every 5 years.

6.152. *Surveys on financial corporations.* In order to obtain source data for financial services, their exports in particular, conducting surveys on financial corporations is very useful. In this respect, it is often financial intermediaries that engaged in international transactions and mandatory reports of their assets and liabilities are required to these corporations in connection with countries' prudence policy. However, such call reports may not contain sufficient information on international trade of financial services.

6.153. To ensure an appropriate coverage of the domestic insurance sector, a survey frame should be available including a list of financial intermediaries. In this respect, depository corporations and securities dealers are usually required to register with supervisory authorities; therefore, a list of these businesses should be readily available from official sources. In contrast, a list of other financial intermediaries other than depository corporations and securities dealers, such as securitisation companies, may not be available in some countries. In this case, it is important to develop country's business profile so that such intermediaries are identified. A full list of financial intermediaries will make it easier to conduct surveys for specific businesses in the financial sector.

B.5.b. Country experience: France

6.154. According to the BPM6 (Paragraph 10.119) and *MSITS 2010* (paragraph 3.191), financial services may be charged for by: (a) explicit charges; (b) margins on buying and selling transactions; (c) asset management costs deducted from property income receivable in the case of asset-holding entities; (d) margins between interest payable and the reference rate on loans and deposits (called financial intermediation service charges indirectly measured, abbreviated as FISIM).

6.155. Explicit charges/revenues in financial services mainly consist in fees received and paid by resident entities from/to non-resident entities. During the last three years, Banque de France (BdF) has improved the way it collects data on financial services. In 2013, data of financial services of the French BoP are collected according to four channels:

- i. the *Relevé de Transactions Économiques (RTE)*, a monthly reporting concerning a sample of 408 non-financial companies which generate the most important flows with entities abroad. In 2012, 58 of those companies reported that they are involved in financial services flows with non residents;
- ii. the *Enquête Complémentaire sur les Échanges Internationaux de Services (ECEIS)*, an annual survey of data from non-financial companies which have generated service flows with non-resident entities. In 2011, 162 among 3 921 companies reported significant financial services flows with non residents ;
- iii. the *Comptes-rendus de Transactions (CRT)*, a reporting by the financial intermediaries. Data is collected either on an annual basis – for 1 523 companies – or on monthly basis for the 37 most significant companies; CRT account for over 75% of the overall flows of financial services with non residents.

iv. a monthly pro forma reporting concerning the Financial Services of the General Government.

6.156. These reports enable BdF to meet with the breakdowns required in BPM6. The conjunction of the four channels allows BdF to produce an estimation based on monthly data with a relevant coverage for the monthly financial services flows.

6.157. The national accounts incorporate a measure of imports and exports of FISIM. A joint workflow with the National Statistical Institute (INSEE) is currently being set up so as to base the BOP FISIM on the National Account quarterly data both for the production process and for back data. This will ensure the consistency of the balance of payments FISIM data with those of the national accounts. FISIM geographical breakdown will be based on the geographical breakdown of the stock of loans and deposits.

6.158. Regarding financial services embedded in margins from buy-sell transactions (b), and asset management costs deducted from property income (c), methodological work is being carried out, based on case studies with the industry.

B.6. R&D surveys

6.159. [Additional text is to be inserted here.]

B.6.a. Country experiences: Singapore – data collection of R&D services

6.160. To comply with BPM6 and MSITS recommendations on recording research and development services Singapore amended its TIS survey questionnaires to capture all relevant transactions. For instance, a new item on the purchases and sales of research results (such as patents, industrial design, industrial know-how, manufacturing rights and prototypes) was introduced in the TIS survey to facilitate data collection and supplement the compilation of R&D services.

6.161. Charges for the use of intellectual property are released and disseminated on a quarterly basis in Singapore's BOP, while annual services receipts and payments with major trading partners are available in the TIS report published once a year. R&D services are included in other business services, which is also disseminated in the quarterly BOP estimates, as well as released separately as a major services category in the annual BOP and TIS series.

B.7. Surveys of tourism activities (supply side)¹³⁵

6.162. This sections deals with the conceptual and practical issues relevant to collection of data on supply of products available for consumption to visitors of the compiling country.

6.163. *Observing the activities of tourism industry.* Observing the activities which supply products relevant to the approximation of travel (credit) and inbound tourism consumption (or at least their change over time) implies the ability to identify those products which meet the share-of-supply condition, that is, those in which travellers and visitors' consumption represent a relevant share of total supply. Additionally, it will be necessary to be able to

¹³⁵ This sub-section deals only with the "supply side" of tourism statistics while the demand side is covered in chapter 7.

distinguish between the output provided to residents and those to non-residents. This is typically the case of accommodation services and travel agencies and tour operator services, a situation recognized by the GATS which considers in its Services Sectoral Classification List under “9. Tourism and travel-related services” the following products: A. Hotels and restaurants (including catering) (CPC 641-643); B. Travel agencies and tour operators services (CPC 7471); C. Tourist guides services (CPC 7472); and D. Other. This is the reason why, in the present Compilers Guide, the supply of accommodation services and of travel agencies and tour operators services will be highlighted as possible sources of information on resident to non-resident transactions through travel and international tourism consumption.

B.7.a. Supply of accommodation services

6.164. Accommodation services are mostly provided by production units specialized in their provision, though there are a few exceptions, e.g. the case of sports clubs that might provide some accommodation to affiliates from other locations. Its provision as a secondary output to other activities is limited so that the analysis of supply will be restricted to production units producing accommodation services as their main output.

6.165. *Providers of accommodation services.* There are two broad categories of visitor accommodation providers: (i) market providers, which receive payment for their services, included under “Accommodation” (ISIC Division 55) or under “real estate activities” (ISIC Division 68) and (ii) non-market providers, which accommodate guests free of charge (case of family and friends and accommodation in one’s own second home or timeshare). Staying with family and friends as a form of accommodation does not generate any additional production of accommodation services, and services provided by own second homes or timeshares do not depend on the actual visit to those homes.¹³⁶

6.166. Only market providers included in ISIC Division 55 will be considered in the present compilation guide, as in most countries, they represent the major providers of accommodation services, and are those at which specialized surveys are usually directed. For more information on the other categories of providers, users can refer to the previously mentioned IRTS 2008 Compilation Guide. Activities under ISIC Division 55 include classes “551 Short term accommodation activities”; “552 Camping grounds”, “Recreational vehicle parks and trailer parks”, and “559 Other accommodation activities”.

6.167. Most national Tourism Administrations have their own registers of accommodation establishments, based on a licensing procedure, which contemplates a more detailed classification (for instance using a “star” system of qualification of the services provided) but possibly a more restricted coverage (no inclusion of class 559, or even of class 551) whereas the NSO might have its own general Business Registry, that classifies generally establishments, without considering these particularities. This makes inter-institutional coordination all the more so important in order to insure consistency of the results.

6.168. *Survey design.* Regarding the statistical design, care should be taken, mostly in the annual NSO design, to ensure that accommodation establishments located in zones of low general economic activity (manufacturing, business services) but with a high tourism orientation not be omitted through the general selection procedure of statistical units (which is often based on the density of general economic activity).

¹³⁶ See TSA-RMF 2008 paragraph 2.36.

6.169. The general sample design should recognize also the existence of small family-owned units. It may be the case that the licensing system is recording them, but not the general register. Such establishments should be included in the annual survey (but might be excluded from the monthly or quarterly ones that usually focus on relatively big units, following a census type system whose base should be frequently updated (at least annually) to take into consideration the dynamics of the activity. Some of these small family-units might also be observed using household surveys or surveys to associative bodies to which they might belong and might inform on the global performance of their associates in terms of tourism indicators (in particular accommodation units offered and occupancy).

6.170. Surveys of accommodation units concentrate in measuring the following specific indicators:

- i. Room occupancy rates (gross or net);
- ii. Bed occupancy rates (gross or net)
- iii. Average number of persons per room
- iv. Average room rate
- v. Average revenue per room night
- vi. Average revenue per guest night
- vii. Average revenue per available room (REVPAR)
- viii. Employees per room
- ix. Average wage per employee
- x. Revenue per employee

6.171. Besides these, all other standard variables related to establishments can be compiled, such as: total revenue, revenue derived from sales of accommodation services, value added, remuneration of employees, details on employment in particular according to the permanency of the work contract (short time contract for the season are often used), gross fixed capital formation, etc.

6.172. Nevertheless, analysts should be warned that the trend in hotel occupancy by non-residents (arrivals, overnights, etc.), or the level and trend of their expenditure in accommodation might provide a biased view of what is actually happening in travel and international tourism consumption, as travellers and visitors might use other alternative forms of accommodation, staying for instance with family and friends or in other forms such as camping grounds, and thus incurring in lower levels of expenditure in accommodation but not necessarily reducing all their other expenditure in the same proportion. This seems to be happening in periods of crisis in which travellers and visitors opt for cheaper forms of accommodation but do not give up travelling altogether.

6.173. *Frequency of accommodation surveys.* Because tourism is a phenomenon which usually presents high seasonal variations, establishments belonging to these activities are observed monthly, quarterly and annually. Tourism administrations frequently control the monthly and quarterly surveys, whereas often the National Statistical Office (NSO) is in charge of the annual, structural survey. The surveys used for these different observation frequencies should have a design that allows comparing their respective results.

B.7.b. Surveys of travel agencies and tour operator services

6.174. The main business of travel agencies and tour operators services consists in trading in services such as passenger transport, accommodation, package tours (arranged by others or

arranged by themselves), their fee being paid usually, but in different proportion both by the traveller, and by the provider of the service (international transport, visitor accommodation services, package tours). The traveller is usually resident of the same economy as the travel agency, though this is rapidly changing with the increase of transactions realized through the Internet; in the case of the service provider, it might be resident of the same economy as the traveller or visitors, resident of same economy as the service provider or resident of any other economy.

6.175. Because their services are used by would-be travellers to book or arrange their trips, travel agencies and tour operators can provide indications on the intensity of travel (debit) or outbound tourism consumption. It is worthwhile mentioning that, in Balance of Payment statistics as well as in International Trade in Services, when services providers (principally international transportation and accommodation providers) use the services of a travel agency, resident in an economy different from their own, to make their supply available to the public, there is a resident-nonresident service transaction that needs to be recorded; this transaction is not included in travel but in trade-related services.

6.176. As a consequence, and in the case of mainly travel agencies, two important sets of data should be collected:

i. Data on the volume of travel agencies' business in intermediating in the sale of international transport, international accommodation and package tours to travel abroad (arranged by either themselves or by specialized tour operators whom, in turn, might be resident in any country). This might be used as an indicator on the trend of travel (debit) and outbound tourism consumption. The information to be collected may refer to: types of clients (business/personal), destinations, number of operations and total value of transactions, treating separately those that correspond to travel on package or without package. Nevertheless, such a measurement might be fragile as travellers are increasingly using the Internet to plan their trips, and thus have direct access to other online travel arrangers, that might be resident in other economies, and thus escape from this measurement.

ii. Because, within the perspective of International Trade in Services, travel agency services, and more generally, reservation services paid for by international transport companies, accommodation service providers, etc... are treated as purchase of services, these fees should be measured separately in order to be included in data corresponding to trade-related services if they correspond to resident-non resident transactions.

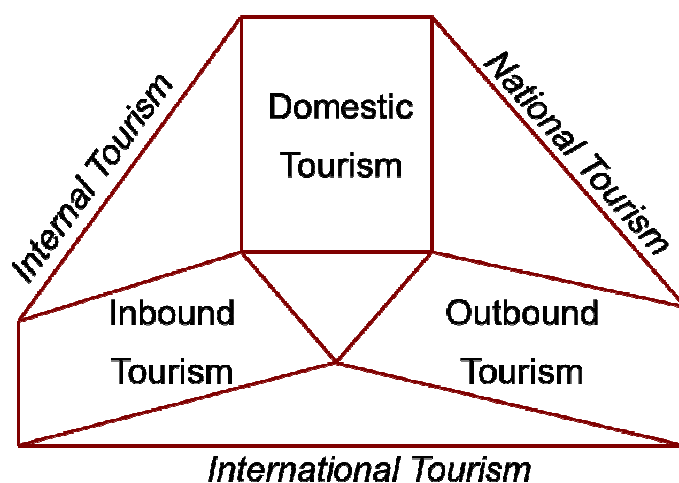
6.177. In the particular case of international transport, obtaining information is complicated because of the multiplicity of travel agents and international carriers worldwide, the different modes by which the payments are collected from the final clients by travel agencies and the way their amount is assigned among the different stakeholders, the complexity of arrangements among airlines, (in particular code sharing and interlining, by which whoever sells the service might not be the one that provides it). All of this results in the fact that the value that can be reported by resident travel agencies of the services sold to nonresident services providers might not be a relevant approximation, but it is information nevertheless. Improvements in the measurement of reservation services as a resident-nonresident transaction could be gained from the possible use of databases generated by the International Air Transport Association (IATA) regarding the clearing system between airlines and travel agents (the Billing and Settlement Plan (BSP6)), and from a better understanding of the role

and modes of remuneration of Central Reservation Systems (CRS) and Global Distribution Systems (GDS), whose residency should be clearly stated.

B.7.c. Country experience: Austria

6.178. Statistics on tourism and travel follow similar concepts but distinguish in some crucial parts which are exhaustively described in IRTS 2008.¹³⁷ Due to conceptual differences the same data sources can be used to describe the similar phenomena of travel and tourism, nevertheless some adjustments and some theoretical thoughts shall be considered. Tourism statistics follows the conceptual framework of IRTS 2008 and can be structured by the forms of tourism of inbound, outbound and domestic tourism.¹³⁸ In the center of observation of tourism statistics are physical flows that coincide with persons undertaking tourism trips and visits. Travel statistics mainly refers to the Balance of Payments conceptual framework of BPM6.¹³⁹ In the center of observation is expenditure of travellers whereas it is to emphasize that monetary flows instead of physical flows are observed (as stated above).

Figure 6.4
Forms of tourism



6.179. *Institutional set up.* In Austria tourism and travel statistics are compiled by different institutions focusing on different parts within the tourism and travel statistics framework namely the Austrian National Bank the Austrian Tourism Board and Statistics Austria. The inter-institutional cooperation is based on agreements between Statistics Austria and the Austrian Tourism Board and Statistics Austria and the Austrian National Bank. Besides the three institutional players that are involved in the compilation of tourism and travel statistics additionally intra-institutional division of work at statistics Austria is incorporated.

6.180. Six major statistical data sets are closely interlinked with the concepts used in travel and tourism: The accommodation statistics, the sample survey on domestic and outbound tourism, the Tourism Monitor Austria (T-Mona), The TSA, the Travel Item of the Balance of Payments and the overall System of National Accounts including Balance of payments.

¹³⁷ IRTS 2008, paragraph 2.49.

¹³⁸ IRTS 2008, paragraphs 2.39-2.40 and figure 1.

¹³⁹ BPM6, paragraph 10.86.

Table 6.2
Data sets and their description

Description of data sets	Data sets					
	Accommodation statistics	Sample Survey	Tourism Monitor Austria (T-Mona)	Travel Item of the Balance of Payments (T-BoP):	Tourism Satellite Accounts (TSA):	SNA/BOP
Type of statistics	Primary basic statistics	Primary basic statistics	Primary basic statistics	Compound statistics	Compound statistics	Compound statistics
Compilation method	Monthly Cut-off sample in paid accommodation establishments (1600 reporting communes)	Quarterly CATI survey among Austrian residents (n=3500)	F2F survey among overnight holiday tourists in Austria -SAMPLE OF 20.000 interviews every 2 nd year in summer and winter season	Hybrid compilation system	Methodology in compliance with TSA:RMF 1998 and Eurostat methodological recommendations	Methodology in compliance with ESA 1995
Reference to	Internal Tourism (inbound and domestic)	National Tourism (outbound and domestic)	Internal Tourism (inbound and domestic)	International Travel (inbound and outbound)	Internal Tourism (inbound and domestic)	-
Coverage	arrivals and overnight stays	number of trips, travelers and expenditure of Austrian residents	Average daily expenditure	expenditure in international travel (credits and debits)	TSA-Tables 1, 2, 3 and 4, covering internal and outbound tourism consumption	Conceptual Framework and Database for TSA
Compiling institution	Statistics Austria (Tourism Department)	Statistics Austria (Tourism Department)	Austrian Tourism Board	Carried out by Statistics Austria (Tourism Department) on behalf of the Austrian National Bank	Statistics Austria (Tourism Department)	Statistics Austria (Directorate Macroeconomic Statistics)

B.8. Other specific surveys (e.g. health, legal, IT enabled, intellectual property)

B.8.a. Legal services: Australia's experience

6.181. This section explains the system applied by the Australian Bureau of Statistics (ABS) to gather and compile legal services data for MSITS 2010, including ensuring the availability of, and access to, the necessary data sources. Legal services are defined by the MSITS2010 to include legal advisory and representation services in any legal, judicial and statutory procedures, drafting services of legal documentation and instruments, certification consultancy and escrow and settlement services.

6.182. Data for Legal services is sourced from the Survey of International Trade in Services (SITS). This is a quarterly survey of resident Australian businesses. All survey Forms, regardless of specific industry focus, request data from respondents on resident to non-resident trade in legal services by country and monetary amount. It should be noted that due to resource restrictions ABS estimates of trade in legal services is restricted to Mode 1, resident/non-resident transactions.

6.183. In 1990 the Australian Attorney-General's Department established the International Legal Services Advisory Council (ILSAC). Since 2004 the council has published an annual Statistics Survey, which includes an overview of exports of legal services. ILSAC has its own data collection sources from within the Australian legal services industry. The reason for ILSAC to establish their own survey was "that the official statistics, collected by the Australian Bureau of Statistics (ABS), do not identify earnings of overseas branch offices of Australian law firms specifically as legal services 'exports', but rather as 'returns on investment'".

6.184. Whilst both the ABS and ILSAC source data and operate independently there is regular communication between the agencies. Over recent years the sharing of information and methods has improved the ability to reconcile the data of both agencies. More transparency and communication has provided the opportunity to gauge the reliability of trends in trade in the International legal services sector.

6.185. The legal services data obtained by the ABS on a quarterly basis is therefore currently compiled solely from Survey of International Trade in Services, asking only for the value of receipts and payments of total legal services. The data is collected on a country/dollar value basis. The data is then disaggregated to provide outputs by State/Country to be more meaningful to users in State Government agencies and other organizations.

6.186. The final trade in legal services statistics are published on a quarterly and annual basis, as part of the International Trade in Services (SITS) series of publications, and posted for general access on the ABS website (www.abs.gov.au).

C. Foreign affiliate statistics and the international supply of services

6.187. The main components of the FATS conceptual framework are described in Chapter 1. Most recently, Eurostat released detailed guidance on the compilation of FATS for European Union members in the 2012 *Eurostat FATS Recommendations Manual* (EFRM). However, it can be used as a reference compilation guide for non-EU countries setting up their own FATS data collections.

6.188. There are two basic approaches to compiling FATS, which are not necessarily mutually exclusive. The first approach, which can be used only for inward investment, identifies from existing data on resident enterprises the subset that is foreign-controlled enterprises. The second approach entails conducting surveys by a national statistical agency or central bank that request information directly on the operations of resident affiliates of foreign enterprises and foreign affiliates of domestic enterprises. For most countries that are compiling FATS, business surveys are usually the most appropriate way to obtain the information needed to provide meaningful FATS data in a reliable and cost-effective fashion.

6.189. An understanding of the FDI universe provides a strong basis for developing an understanding of the FATS universe as a usual precondition for the establishment of a foreign affiliate is the development of investment flows leading to an FDI relationship. Although the FDI universe has a broader coverage than the FATS universe, a data collection program for FDI statistics can provide a base for a data collection program for FATS. Links to existing data on FDI could be used to identify foreign-controlled affiliates for which FATS variables could be collected on a separate survey. Alternatively, key FATS variables might be incorporated into existing FDI surveys.

6.190. This section will describe the different types of business surveys that could be used to compile FATS and also briefly mentions other (non-survey) data sources. This is followed by discussion of FDI surveys in the context of FATS.

C.1. Structural business surveys

6.191. Structural business statistics (SBS) surveys represent a class of surveys conducted by a compiling country designed to provide detailed economic and financial data about the activities of domestic resident business enterprises. Reporting and statistical units for these surveys can be identified at several levels of consolidation ranging from establishments (single physical locations or local activity units) to fully-consolidated enterprises that may include several subsidiaries and operate in several different sectors of the economy.

6.192. SBS surveys can be used to provide FATS measures only for inward FATS by identifying the subset of resident domestic corporations that meet the criteria for FATS statistical units and for which the recommended data items are either already collected for other purposes or can be added to the surveys to meet the FATS requirements. Under this approach, FATS would be obtained as an aggregation of statistical variables across the foreign-controlled statistical population. This approach requires the existence of indicators of foreign ownership in the domestic business register, a sample frame that meet the FATS requirements, or the ability to link SBS data with FDI survey through the use of common identifiers. An example of this for the United States is the linking of inward FDI company data with the more comprehensive and detailed data collected every five years at the establishment level in the economic censuses. Where existing domestic statistics are used as the source of information, links to FDI data can be used to supplement the SBS data with information, such as by identifying the country of the owner.

6.193. Compiling inward FATS statistics from SBS data has a few advantages. The FATS variables will be compatible with measures of the domestic economy. It allows FATS variables to be compiled with no added burden to reporters and with fewer resources than a separate data collection program. However, it may be difficult to include the full range of recommended FATS data items due to limitations in the domestic statistics.

C.2. Foreign Affiliate Surveys

6.194. For some countries it may be feasible and desirable to conduct special surveys designed to collect FATS data separately from any existing FDI data collection. These surveys would be limited to the subset of the FDI population that qualify for FATS and may be conducted less frequently than the FDI surveys. Such surveys could be conducted separately for both inward FATS and outward FATS, or just for outward FATS if SBS surveys can be used for inward FATS. This approach may be appropriate when an existing FDI data collection program is not already in place or cannot be easily adapted for the requirements of compiling FATS. In the absence of SBS surveys for inward FATS, separate surveys would be required for inward FATS and outward FATS due to the distinctly different populations. The ability to conduct separate surveys may be limited by legal and institutional conditions.

C.3. Foreign direct investment surveys in the context of FATS

6.195. Where there are existing FDI surveys of foreign affiliates, registers used for FDI would typically be used to identify foreign-controlled affiliates that qualify for FATS

treatment. Alternatively, key FATS variables could be incorporated into existing FDI surveys. Compilers should note that incorporating FATS-related questions in FDI surveys may increase the response burden imposed on enterprises that are not part of the FATS population and that FDI surveys may need to be conducted more frequently (for example, quarterly), whereas FATS may be needed less frequently (for example, annually). However, if a country conducts an annual survey of direct investment as well as monthly or quarterly surveys, it may be possible to incorporate FATS variables relatively easily to this survey.

6.196. In many cases, a mix of approaches may work best, with separate surveys (or existing FDI surveys) being used for the collection of outward FATS and the identification of foreign-controlled companies; and with “enterprise statistics” providing the context for the compilation of inward FATS, providing a more detailed activity breakdown and a more comprehensive set of variables. Extended business registers might also be a suitable means of maintaining such information. This approach has already been adopted in some countries which use them to maintain data on foreign ownership. *MSITS 2010* recognizes the advantages and disadvantages of each approach and the need for compilers to demonstrate flexibility in adapting the recommendations to each country’s statistical infrastructure while maximizing the use of existing data.

6.197. While FDI statistics have several differences from FATS variables. FDI statistics may provide useful indicators relating to commercial presence for those countries that have not yet begun to compile FATS. In particular, FDI positions can serve as an indicator of a country’s interests in using commercial presence to supply services internationally. In addition, FDI statistics can be used in conjunction with FATS to indicate the extent to which the operations of affiliates were financed with funds from direct investors, as well as the extent to which the income generated by affiliates accrued to direct investors.

C.4. *International approach: the Coordinated Direct Investment Survey*

6.198. The Coordinated Direct Investment Survey (CDIS) is a worldwide statistical data collection effort led by the IMF designed to improve the availability and quality of data on direct investment, both overall and by immediate counterpart economy. The concepts, coverage, valuation, and classification of data collected in the CDIS are consistent with the sixth edition of the *Balance of Payments and International Investment Position Manual* and the fourth edition of the *OECD Benchmark Definition of Foreign Direct Investment* to the maximum extent possible¹⁴⁰. The CDIS database presents detailed data on “inward” direct investment positions (i.e., direct investment into the reporting economy) cross-classified by economy of immediate investor, and data on “outward” direct investment positions (i.e., direct investment abroad by the reporting economy) cross-classified by economy of immediate investment. The CDIS database is available at: <http://www.imf.org/external/np/sta/cdis/index.htm>. The CDIS data could be used by countries as indicators of the activities of foreign-owned affiliates in their economy as well as on the activities of their multinational companies in other countries.

¹⁴⁰ As the CDIS is concerned solely with bilateral data on direct investment, the Directional Principle (inward, outward) are recommended to be used for reporting the survey results while in BPM6 and BD4, the concepts of inward and outward FDI were updated for the recording of investment positions on a gross assets and liabilities basis.

C.5. *Country experiences*

C.5.a. *Country experience: the United States*

6.199. In 1976, the International Investment Act authorized the U.S. BEA to collect data on the finances and operations of foreign-owned companies in the United States and of U.S. parent companies and their foreign affiliates.¹⁴¹ The Act was expanded to include trade in services in 1984. The Act made responding to BEA's surveys mandatory and required the BEA to maintain the confidentiality of the data collected. Another act passed in 1980, the Paperwork Reduction Act, governs the collection of data from the public by any government agency. The Paperwork Reduction Act requires agencies to minimize the burden they place on private businesses and citizens in collecting information.

6.200. BEA's surveys of the operations of MNCs collect data on balance sheets; income statements; sales; employment and employee compensation; research and development expenditures; property, plant, and equipment; taxes; trade in goods; and the components necessary to estimate value added. While the surveys cover both majority-owned and minority-owned affiliates, more data are collected for majority-owned affiliates.

6.201. BEA uses a system of benchmark surveys, or censuses, and annual surveys to collect data on FATS. Benchmark surveys are conducted every five years and cover both FATS and FDI data. Outward FATS benchmark surveys are conducted in years ending with '4' and '9' while inward FATS benchmark surveys are conducted in years ending with a '2' and '7'. Benchmark surveys cover the universe of multinational companies, but data collection is much less detailed for smaller reporters and for minority-owned reporters.

6.202. Annual surveys are conducted between benchmark surveys. The smallest reporters are exempt from reporting on the annual surveys, and BEA uses statistical sampling for the medium-sized reporters. Large reporters are required to report annually and provide the most-detailed information. The reporting thresholds are based on the reporter's assets, sales, or net income. Estimates are made for reporters not required or failing to report in a given year, so the published statistics cover the universe. Smaller majority-owned foreign affiliates report less detail than larger majority-owned foreign affiliates. To present statistics on the operating data of all majority-owned foreign affiliates, BEA estimates items that are only collected for large majority-owned foreign affiliates for the smaller majority-owned affiliates. These estimates are based on relationships among the data items for a panel of comparable larger majority-owned foreign affiliates.

6.203. For inward FATS, data are collected on an enterprise group basis and cover the fully consolidated domestic entity. For outward FATS, data on U.S. parents are collected on an enterprise group basis and cover the fully consolidated domestic entity. The U.S. parent is required to report on the operations of its foreign affiliates. The reporting for foreign affiliates tends to be less consolidated. First, affiliates can never be consolidated across countries. Second, affiliates cannot be consolidated across industries unless they were part of an integrated production process. For example, if Mexican affiliate A manufactures automobile engines and a majority of its sales were to Mexican affiliate B, which assembles

¹⁴¹ The U.S. BEA first collected data on the operations of U.S. parent companies and their foreign affiliates in 1950. Data collection was irregular prior to 1976 but became more regular after the passage of the 1976 Act. The U.S. BEA has collected annual data on inward FATS since 1977 and on outward FATS since 1982.

automobiles, then affiliates A and B can be consolidated. Finally, affiliates cannot be consolidated if they do not have the same ownership structure.

6.204. Data are collected on an accrual basis and generally follow U.S. Generally Accepted Accounting Principles (U.S. GAAP). Data are reported based on the company's fiscal year. Thus, for a given year, the data published cover the operations of companies for their fiscal year ending in that year. For example, the data published for 2012 cover the operations of companies for their fiscal years that ended in 2012. For outward FATS, items recorded in foreign currency are translated into U.S. dollars following U.S. GAAP, which calls for assets and liabilities to be translated using the exchange rate on the date of the balance sheet and for revenues and expenses to be translated using weighted-average exchange rates for the period.

6.205. For inward FATS, operations are classified by the country of the ultimate beneficial owner, which is equivalent to the ultimate controlling investor. However, a few data items are classified by the country of the foreign parent. For outward FATS, the statistics are classified by the country where the affiliate is located. That is, where the affiliate's physical assets are located and where its primary activities are carried out. In most cases, the country of location and the country of incorporation are the same. However, in some cases, a business enterprise is incorporated in one country but part or all of its physical assets are carried out in a second country. If all of its operations are in a single country outside of its country of incorporation, then the affiliate is treated as a single affiliate in the country of its physical presence. If the affiliate has physical assets in each country, it is treated as two affiliates.

6.206. For classification by industry, BEA uses industry codes derived from the North American Industry Classification System (NAICS). The industry codes used by BEA generally correspond to the 4-digit NAICS level. For inward FATS, each affiliate reports up to 10 industries in which it has sales. BEA uses these data to assign a primary industry code to the affiliate. This assignment follows a three-step procedure. First, a given affiliate is classified in the NAICS sector that accounted for the largest percentage of its sales; NAICS sectors are at the two-digit level. Next, the affiliate is classified into the 3-digit subsector within that sector for which its sales were largest. Third, within that 3-digit subsector, the affiliate is classified in the 4-digit industry for which its sales were largest. For outward FATS, the same process is followed to assign U.S. parents and each foreign affiliate to a primary industry.

6.207. BEA asks reporters to break out their sales into goods, services and investment income. For inward FATS, companies are asked to further break out their sales of services between sales to U.S. persons and sales to foreign persons. For outward FATS, BEA asks that sales of goods, services, and investment income each be broken out by destination: to the United States, to the host country, and to third countries. For each of these, BEA asks that the reporter further distinguish between sales to affiliated parties and sales to unaffiliated parties.

6.208. The data reported have to pass a large number of computerized edit checks. Where possible, the data are reviewed for their consistency with related data for that reporter, with data reported on related report forms (such as on the quarterly FDI surveys BEA collected for that reporter), with comparable data from outside sources, and with comparable data reported for other reporters. As a result of this edit and review process, a number of changes are made to the reported data, usually after consulting with the reporter. In some cases, usually

involving smaller affiliates, estimates based on industry averages or other information are substituted for missing or erroneously reported data.

6.209. BEA publishes FATS statistics annually. Preliminary FATS statistics are published about eighteen months after the reference year. The statistics are revised once about twelve months later. The statistics, survey forms, and methodologies, are available on BEA's website: www.bea.gov.

C.5.b. Japan

6.210. Among Japan's official statistics on foreign affiliates, the Survey on Overseas Business Activities of Japan (outward survey) and the Survey of Trends in Business Activities of Foreign Affiliates (inward survey), conducted by the Ministry of Economy, Trade and Industry (METI) provides a large scope of information to statistics users. These surveys serve as Japan's FATS and are used as sources for joint OECD-Eurostat annual surveys for FATS. They are conducted on an annual basis and components of data correspond to those recommended by *MSITS 2010*, while there are some deviations from the methodologies of *MSITS 2010*, as follows:

- i. In case that the parent company is mainly involved in financial, insurance and real estate industries, they and their affiliates are excluded from the target of the outward survey.
- ii. Inward data are based on ownership ratio exceeding one-third, while outward data are based on 10 percent standard, while the majority standard is adopted by *MSITS 2010*.
- iii. Ultimate investors are not identified in inward surveys.

6.211. *The Survey on Overseas Business Activities of Japan*. This survey aims at presenting the actual conditions concerning overseas business activities of Japanese corporations that will serve as a basis for propulsion of future industrial and trade policies. Survey targets are parent companies: Japanese corporations which, as of the end of March, own overseas affiliates, excluding those in the financial and insurance industry or real estate industry (hereinafter referred to as "Parent Companies"), as well as overseas affiliates ("Subsidiaries" and "Sub-subsidiaries" are collectively referred to as "overseas affiliates"). The following overseas affiliates are surveyed:

- i. A foreign affiliate in which a Japanese corporation has invested capital of 10% or more;
- ii. A foreign affiliate in which a "subsidiary," funded more than 50% by a Japanese corporation, has invested capital of more than 50%;
- iii. A foreign affiliate in which a Japanese corporation and a subsidiary funded more than 50% by a Japanese corporation has invested capital of more than 50% cumulatively.

6.212. This survey is based on Japan's Statistics Law. For 2012 survey, 6,127 parent companies comprised the population and questionnaires were sent to the entire population. 72.3% of those enterprises replied. Survey forms have to be filled out by parent companies.

In the case that multiple Japanese companies are parents, the company with the biggest share in the equity (leading company in the case that the shares of two companies are the same) of a foreign affiliate should fill out the form.

6.213. Questioned items for parents of foreign affiliates are listed below (the survey form for overseas affiliates presents business trends of foreign capital affiliated enterprises, and aims toward assisting in the formulation of future and trade policy):

- Overseas affiliate profile
- Investment
- Operation status
- Dissolution, withdrawal, decline in control share
- Employment: total full-time employees
- Sales: sales turnover, of which, export to Japan (of which, sales to parent companies, sales to other companies), sales in the country where the affiliate is located (of which, sales to Japanese companies, sales to local companies, sales to other companies), export to countries other than Japan (broken down by regions)
- Purchases: purchases turnover, of which, purchases from Japan (of which, purchases from parent companies, purchases from other companies), purchases in the country where the affiliate is located (of which, purchases from Japanese companies, purchases from local companies, purchases from other companies), purchases from countries other than Japan (broken down by regions)
- Expenses: cost of purchases, sales and administration costs, payrolls, rents
- Profits and appropriation of earnings
- Appropriation of earnings to investors: appropriation to Japanese investors (of which, dividends, royalties), appropriation to other investors
- Research and development expenses: include salaries and bonuses for personal engaged in R&D (exclude retirement allowance), costs of raw materials, utilities, consumable supplies and others, depreciation of research-related tangible fixed assets, burdens for coordinated research, and expenses for R&D commission
- Capital investment
- Major products (further, intermediate goods are distinguished from final goods)

6.214. *The Survey of Trends in Business Activities of Foreign Affiliates.* The survey covers following enterprises:

- i. A company in which more than one third of shares or holdings is owned by foreign investor;
- ii. A company funded by a domestic company (in Japan) in which more than one third of shares or holdings is owned by foreign investors, in which the total ratio of the foreign investor's direct and indirect investment is more than one third of the shares or holdings of the company concerned;
- iii. Companies that fall under (1) or (2) above, in which the principal foreign investor's direct investment ratio is more than 10%.

6.215. This survey is conducted based on Japan's Statistics Law. For the 2011 survey, 5,576 companies comprised the population and questionnaires were sent to the entire population; 62.8 percent of those enterprises replied.

6.216. Questioned items are listed below (on the survey form for foreign affiliates in Japan):

- Company outline
- Operation status
- Employment: total full-time persons employed (of which, number of permanent foreign employees), salaried directors (of which, number of foreign salaried directors), full-time employees (of which, number of foreign full-time employees), regular employees and regular staff (of which, number of foreign regular employees and regular staff), part-timers
- Types and functions of establishments: number of establishments in Japan, indicate whether affiliate in Japan is regional headquarters in the Asia and Oceania region
- Sales: sales turnover, of which, exports (of which exports to principal foreign investors, exports to Asian region), royalty income
- Purchase: purchase turnover, of which, imports (of which, imports from the principal foreign investor, imports from Asian region)
- Expenses: payments for the principal foreign investor (of which dividends, interest on loans, royalties)
- R&D expenses: include salaries and bonuses for personal engaged in R&D (exclude retirement allowance), costs of raw materials, utilities, consumable supplies and others, depreciation of research-related tangible fixed assets, software production expenses if recorded as R&D expenses, expenses for R&D commission, and research grants
- Plant and equipment investments
- Profits
- Assets
- Investment environment in Japan: respondents choose among exemplified replies
- Cost of doing business in Japan: respondents choose among exemplified replies
- Employment and human resources in Japan: respondents choose among exemplified replies
- Business partnership with Japanese companies (building a cooperative relationship for business under a contract between your company and a Japanese company): respondents choose among exemplified replies
- Future plan for business partnerships with Japanese companies: respondents choose among exemplified replies
- Company's hiring outlook for this year: respondents choose among exemplified replies
- Future business expansion in Japan: respondents choose among exemplified replies

C.5.c. Country experience: Poland's surveys of SITS and FATS

6.217. In Poland surveys concerning international trade in services and FATS are not combined and are conducted as two separate surveys. However a methodological work aimed at use of FATS data in international trade in services survey is in progress. The survey concerning FATS complies with Regulation (EC) No 716/2007 of the European Parliament and of the Council of 20 June 2007 on Community statistics on the structure and activity of foreign affiliates and Eurostat methodology.

6.218. *Inward FATS*: Census survey on companies with foreign capital is the source of inward FATS population and its geographical breakdowns. This is an annual survey. Inward

FATS population is a subset of SBS population in the dataset transmitted to Eurostat. Economic data are taken from SBS. Data prepared according to FATS-R and sent to Eurostat concern enterprises with more than 9 persons employed. The UCI approach is applied to identify statistical units.

6.219. *Inward FATS* data disseminated in Polish publication contain information on value of foreign capital. Economic characteristics like turnover, number of enterprises concern whole population of companies with foreign capital, not only foreign affiliates. Metadata concerning the survey on entities with foreign capital are included in methodological notes of yearly publication: "Economic activity of entities with foreign capital in..... year" http://www.stat.gov.pl/gus/5840_2037_ENG_HTML.htm.

6.220. Metadata on FATS according to FATS_R are not published at national level.

6.221. *Outward FATS*: Data are collected in annual census survey on entities having abroad branches, establishments or shares in other entities. The sources of Outward FATS reporting units are: (1) information on entities having affiliates abroad included in SBS survey and Inward FATS survey for the same reference year which are carried out earlier, (2) information included in survey on enterprise groups for previous year, (3) dataset of entities from Outward FDI survey of National Central Bank of Poland for the same reference year.

6.222. Entities from datasets mentioned above are included in frame population and a statistical form is sent to them. From the survey outward FATS population is separated according to FATS-R recommendations.

6.223. The UCI approach is applied to identify reporting units. Information about UCI derived from Outward FATS survey is compared with the information available in the survey on enterprise groups for consistency. Data disseminated at national level concern all statistical units abroad regardless of their country of residence and capital share of reporting unit in capital of statistical unit (not only FATS controlled by UCIs Polish residents). Outward FATS is a subset of population surveyed in survey on entities having abroad branches, establishments or shares in other entities.

C.5.d. Country experience: India's Survey of Foreign Collaboration in Indian Industry

6.224. The Survey of Foreign Collaboration in Indian Industry was instituted by the Reserve Bank of India in 1965 with the objective of collecting comprehensive information on the operations of Indian companies having foreign participation in equity capital and/or technical collaboration agreements with foreign companies. Information collected through this survey is used for compilation of Foreign Affiliates Statistics (FATS).

6.225. The objective of this survey is to generate comprehensive information regarding the nature, pattern, problems and operation of the foreign collaboration arrangements that would serve as input for the decision makers at various levels as well as for the researchers. Apart from the information related to technical collaboration agreement, the survey also collects information on equity participation.

6.226. The Survey covers Indian companies which have entered into foreign collaboration agreement during the period of the Survey which so far has varied between 4 to 7 years. The survey captures information on a wide range of indicators of performance (production,

exports, imports, cost of material, profitability, employment, research and development expenditure, etc.) along with the crucial features of technology transfer agreements (nature, duration, mode of payment, export restriction, provision of exclusive rights, use of technology after expiry of the agreements, etc.). So far eight rounds of such surveys have been conducted. The last survey has been conducted for the period 2007-08 to 2009-10 and the report of this round has been published recently.

6.227. On the basis of the information collected through these surveys, detailed statistics on the following are produced:

- i. Number of companies that had entered into foreign technical collaboration agreements according to the type of companies, namely, subsidiary, associate and pure technical collaboration companies;
- ii. Industry and country-wise distribution of agreements of foreign collaborating companies;
- iii. Distribution of agreements according to types of assets transferred and mode of payment of foreign collaboration companies;
- iv. Export and import of foreign collaboration companies by industries categorized into six major types, namely:
 - a. primary
 - b. manufacturing
 - c. electricity, gas, steam and air conditioning supply
 - d. water supply, sewerage, waste management and remediation activities
 - e. construction
 - f. services

Among these, manufacturing and services are further sub-divided into 15 the following components and exports, imports figures corresponding to each of these are compiled (see table 6.3);

- v. Industry-wise expenditure towards research & development as percentage of total value of production;
- vi. Industry-wise foreign equity participation of all reporting companies as well as subsidiary companies;
- vii. Exports and imports of subsidiary companies at disaggregated level of industries;
- viii. Value addition by foreign subsidiaries, etc.

Table 6.3

Categorization of industries resulting from India's Survey of Foreign Collaboration in Indian Industry

Industry	
Manufacturing	Food, beverages and tobacco products
	Textiles and clothing products
	Leather & related products
	Wood & wood product; except furniture
	Printing and reproduction of recorded media
	Coke and refined petroleum products
	Chemicals and chemical products
	Pharmaceuticals, medicinal chemical and botanical products
	Rubber and plastics products
	Basic metals
	Computer, electronic and optical products
	Electrical equipment
	Machinery and equipment n.e.c.
	Transport equipment
	Other manufacturing
Services	Wholesale and retail trade; repair of motor vehicles and motorcycles
	Transportation and storage
	Hotel and restaurant
	Computer and related activities
	Financial and insurance activities
	Real estate activities
	Other service activities

6.228. Additional information on Indian survey of Foreign Collaboration in Indian Industry is available on the UNSD website.

D. Combined trade in services-FATS surveys*D.1. Construction surveys*

6.229. According to MSITS 2010, construction covers the creation, management, renovation, repair or extension of fixed assets in the form of building, land improvements of an engineering nature and other constructions such as roads, bridges and dams. It also includes related installation and assembly work, site preparation and general construction as well as specialized services such as painting, plumbing and demolition.¹⁴²

6.230. The construction item is disaggregated into¹⁴³: (i) construction abroad, as regards a) the gross value of the construction works carried out by enterprises resident in the compiling economy and commissioned by non-residents (credits/export) and b) the goods and services acquired from residents in the host economy by those enterprises (debits/import); (ii) construction in the reporting economy, as regards a) the construction works commissioned by residents of the compiling economy and carried out by non-resident construction enterprises (debits/import) and b) the goods and services acquired from resident entities by those enterprises (credits/export).

¹⁴² MSITS 2010, paragraph 3.132.

¹⁴³ Ibid., paragraphs 3.136-137.

6.231. In order to correctly compile the item it is particularly important to precisely identify the residence of the enterprise realizing the construction work. Indeed, a construction enterprise established in one economy may undertake construction of projects in another economy through a branch, i.e. via a direct investment relationship. In the former case the construction activities are regarded as export of services, whereas in the other case they are considered direct investment operations.

6.232. The MSITS 2010 provides clarification on how to identify situations in which the creation of a separate branch resident in the country where the work is undertaken occurs, e.g. the project lasting at least one year, the existence of a complete and separate set of accounts, the activity being subject to tax in the host country, a substantial physical presence, etc.¹⁴⁴

6.233. The construction services may be allocated to either Mode of supply 3, i.e. commercial presence, or Mode 4, that is presence of natural persons, to account for cases involving the presence of resident workers (employed by the resident construction enterprise or self-employed) in the host economy. It should be noted that, although in general Mode 3 concerns mostly domestic sales of foreign affiliates, the construction services for works carried out without establishing a branch and lasting less than one year are also to be regarded as commercial presence according to the GATS.¹⁴⁵

6.234. Different data sources and methods, primarily an ITRS or enterprise survey, can be used to compile the balance of payments (BoP) construction item.

6.235. Although the ITRS is largely used for BoP purposes, in relation to constructions it may give rise to several biases. First, it may prove difficult to correctly identify the relevant settlements, given the rather complex criteria for residence attribution set by the manuals (i.e. a site office may be regarded as a resident of the economy in which a short-term construction work is undertaken, even if this is not the case). Second, difficulties may arise in collecting data with the required level of detail (e.g. for the separate identification of goods and services used as an input or the distinction between short and long-term projects). Third, the ITRS thresholds set in some countries may be too high to properly cover some of the payments related to construction projects (especially in the case of fractionated settlements). Fourth, the partner country allocation may suffer the typical biases of ITRS (as it usually records the country of settlement, which may differ from the counterpart country of the transaction).

6.236. Partly because of the limitations of the ITRS, some countries adopt collection systems based on enterprise surveys, usually carried out on a sample basis. Business surveys can be general purpose, i.e. designed to cover the full range of services or, alternatively, specific i.e. addressed to compile a single type of services, such as construction. The second case could imply, for example, the selection of a sample of enterprises, from a national business register, whose main sector of economic activity is construction-related.

6.237. Although business surveys are designed to collect information on both credits and debits, the coverage of the latter could be more difficult. On the credits side, the services provided by the firm are likely to be closely related to the sector of activity of the same enterprise. This is less true on the debits side, since companies of all industries may import construction services. Hence, for construction as for other services items, for the debits side a

¹⁴⁴ MSITS 2010 3.20-23, 3.142; BPM6 10.103, BPM6 Compilation Guide, Chapter 12, paragraph 11.

¹⁴⁵ MSITS 2010, paragraphs 5.53-54.

general purpose enterprise survey, covering all sectors, may represent the preferred option. On the contrary, a specific survey may be more appropriate for the credits side. However, the adoption of a general purpose survey for the debits side may lead to prefer the same approach also for the credits side, on the basis of efficiency evaluations (as it may involve a better exploitation of “contact costs”).

D.1.a. Country experience: Italy

6.238. In Italy construction data are compiled by the central bank (Bank of Italy), in the wider framework of BoP statistics. The external statistics system has been deeply revised in 2010, by replacing the old settlement-based approach (ITRS) with a survey-based one. The new system mainly relies on the direct reporting of resident entities involved in cross-border transactions. The direct reporting system, covering non-financial and insurance corporations, consists of a set of sample surveys on non-financial transactions and financial transactions and positions.

6.239. Construction-related information is collected through a Quarterly non-financial transactions questionnaire (TTN), consisting of regular reports on other services (i.e. services other than travel and transport), intangible assets, unilateral transfers and compensation of employees (see the TTN survey form in the following pages).¹⁴⁶ Therefore, the construction item compilation is based on a general purpose sample, both for credits and debits.

6.240. Among the around 3,000 firms sampled with the TTN survey, about 450 enterprises are mainly engaged in construction activities, according to the reported NACE code. They cover about 23 per cent and 30 per cent, respectively, of the population total turnover (around 180 billion euro) and foreign turnover (65 billion euro).¹⁴⁷

6.241. The TTN questionnaire begins with a general part, covering the enterprise structural characteristics, such as company’s fiscal and NACE codes, last balance sheet data (total assets, turnover, operating profit), and, if the reporting agent is part of an enterprise group, information on the ultimate parent company. This is followed by a section concerning transactions not related to constructions.

6.242. Construction specific information has to be reported in a subsequent dedicated section of the questionnaire, where constructions abroad and constructions in Italy are distinguished. Despite the TTN survey is meant to mainly address non financial items, the construction section aims also at contributing to the compilation of FDI, including the related flows of income.

6.243. Firms are required to list the construction projects in which they are involved either as contractors or clients and the counterpart is a non-resident entity. For each project, both for constructions abroad and constructions in Italy, enterprises are requested to report: (i) the country where the work is carried out, for constructions abroad, or the country of residence of the contractor, in the case of constructions in Italy; (ii) the construction start and end dates, according to the project current contractual arrangements, in order to compute the duration of

¹⁴⁶ For further details on the TTN survey sample methodology, see Chapter 5, paragraph F.

¹⁴⁷ The foreign turnover is estimated on the basis of a survey carried out by the National Builders Association (ANCE) in 2012 on 40 Italian construction enterprises (ANCE, Rapporto 2012 sulla presenza delle imprese di costruzione italiane nel mondo, <http://www.ance.it/docs/docDownload.aspx?id=8546>).

the activity; (iii) the total contract value (i.e. the gross construction value) and its currency of denomination.¹⁴⁸ The amount is inclusive of all goods and services used as inputs for the work, other costs of production and operating surplus that accrues to the construction contractor. The construction is therefore valued on a gross basis, according to MSITS 2010.¹⁴⁹

6.244. In case of works taking place over several reference quarters, enterprises have to repeat the reporting of the construction details in each TTN questionnaire.

6.245. In Italy's system, the attribution of the status of "branch resident in the host country" (see par. 6.60) is based on a simplified criterion: the entity carrying out the works is considered a resident branch of the host country if the project lasts one year or more. Consequently, depending on the estimated duration of the works, the construction activity is either regarded as an FDI-related operation, if the construction work extends over a period of at least one year, or as a service transaction in the opposite case (see par. 6.5). In Italy the gross construction value of projects lasting one year or more largely exceeds that of short-term works, both for constructions abroad (98% vis-à-vis 2% as an average in the period 2008-2012) and for constructions in Italy (80% vis-à-vis 20%).

6.246. *Constructions lasting less than one year.* The TTN questionnaire collects specific information needed to compile the construction services item. In particular, only for constructions abroad, firms are required to report the following transactions, in relation to the reference quarter:

i. Goods, services and labour purchased/acquired abroad, used to compile the construction abroad debits. According to MSITS 2010, the goods and services acquired by the resident enterprise from third economies should be recorded under the appropriate general merchandise or services item.¹⁵⁰ However, in order to reduce the reporting burden, firms are not required to split the inputs purchased in the host economy from those acquired in third countries; as a consequence the inputs purchased abroad are all allocated to construction abroad debits and to the host economy as the partner country. Moreover, another approximation is that also labour costs are included in construction abroad debits, as it proved not feasible for firms to separately identify this cost component.¹⁵¹

ii. Goods purchased in Italy, used to adjust the BoP goods item, by deducting the corresponding amounts from merchandise exports. This is necessary in order to avoid duplications, as the goods purchased in Italy by the resident construction enterprise are also recorded in merchandise exports, based on foreign trade statistics.¹⁵² In principle, also the services acquired by the resident construction enterprise from residents of the home economy should be excluded;¹⁵³ however, in order to simplify the reporting, it is assumed that all services are acquired from the host economy.

¹⁴⁸ More details are requested only for constructions abroad in order to distinguish the goods and services procured by the company undertaking the construction project in the host economy (see paragraph 6.74).

¹⁴⁹ MSITS 2010 paragraph 3.133.

¹⁵⁰ Ibid., paragraph 3.138.

¹⁵¹ Ibid., paragraph 3.141.

¹⁵² Ibid., paragraph 3.140, footnote 14, and BPM6 paragraph 10.22 (d).

¹⁵³ MSITS 2010, paragraph 3.138.

6.247. As mentioned, the above details are not collected for constructions in Italy, since the information is usually not available to the reporting enterprises receiving the service. In order to fill this information gap, an assumption is made that the cost structures of constructions abroad and in Italy are similar. Therefore, the missing information (i.e. the goods, services and labour purchased/acquired in Italy and the goods purchased in the country of residence of the construction firm) is estimated on the basis of the ratio of the symmetric items reported for constructions abroad to the gross construction value.

6.248. Table 6.4 shows the different sources used for each component of construction services. The constructions abroad - export and the constructions in Italy - import components are computed assuming that the gross construction value is uniformly distributed throughout the duration of the work. Italy is a net exporter of construction services; the gross value of constructions abroad (around 160 million euro annually, as an average in the period 2008-2012) largely exceeds that of constructions in Italy (around 40 million euro).

Table 6.4

Methodology for the compilation of the construction services item in Italy

	Export	Import
Constructions abroad	Total contract value pertaining to the reference quarter	Goods, services and labour purchased/acquired abroad
Constructions in Italy	Goods, services and labour purchased/acquired in Italy (estimated)	Total contract value pertaining to the reference quarter

6.249. *Constructions lasting one year or more.* Also in the case of constructions lasting one year or more the gross construction value is uniformly distributed throughout the entire duration of the work. The quota pertaining to the reference quarter is considered an increase of FDI equity stock (FDI abroad - or assets - in the case of construction abroad and FDI in the reporting economy - or liabilities - in the case of construction in the compiling country).

6.250. For constructions abroad, in the quarter in which the construction project ends, the reporting agent has to report the additional information on the net margin, i.e. the difference between the gross construction value and all costs incurred by the construction enterprise in relation to the project. For constructions in Italy, the net margin, which is not directly available to the reporting agent, is estimated by the compiler applying to the gross construction value the average rate of return observed for constructions abroad.

6.251. Consequently, in the BoP of the quarter in which the construction ends: (i) the gross construction value is recorded as FDI disinvestment (on the assets side in the case of constructions abroad, on the liabilities side in the case of constructions in Italy), since the construction is delivered to the client; (ii) the net margin is recorded as FDI income (on the credit side in the case of constructions abroad, on the debit side in the case of constructions in Italy).

Box 6.1

Example of measurement of construction services in Italy

A construction enterprise resident in Italy starts a construction project in economy B on the 1st of February 2013. The end date of the project is the 10th of April 2013. The gross construction value is 100,000 euro. The project is considered as a construction service, as it lasts less than one year (69 days). The enterprise is requested to report the construction project in the TTN questionnaires related to both the first and the second quarter of 2013, specifying the project start and end dates, the counterpart country and the gross value of the construction.

In order to undertake the construction the enterprise purchases inputs (materials, services and labor) during the first quarter. The purchases are reported as follows:

- Goods purchased in Italy: 20,000 euro;
- Goods, services and labor purchased/acquired abroad: 50,000 euro.

The gross construction value pertaining to 2013Q1, to be allocated in Italy's BoP as constructions abroad - export with counterpart country B, is computed as follows:
(100,000 / 69 total days * 59 days in the quarter) = 85,507 euro.

The reported goods, services and labor purchased/acquired abroad are allocated as constructions abroad - import with counterpart country B. The reported goods purchased in Italy are deducted from the goods exports, again with partner country B, of the BoP. The complete recording for 2013Q1 is shown in the table that follows:

2013 Q1 BoP

	Export	Import
Constructions abroad	85,507	50,000
Goods	-20,000	

In 2013Q2 the enterprise does not purchase any input, neither in Italy nor abroad, thus, it has only to report the construction start and end dates, the counterpart country and the gross construction value. The construction value pertaining to 2013Q2, to be allocated the BoP as construction abroad - export with counterpart country B, is computed as follows:

(100,000 / 69 total days * 10 days in the quarter) = 14,493 euro.

Hence, the BoP recording for 2013Q2 is the following:

2013 Q2 BoP

	Export	Import
Constructions abroad	14,493	

Box 6.2

Example: measurement of construction FDI-related flows

A construction enterprise resident in Italy starts a construction project in economy B on the 1st of January 2012. The end date of the project is the 31st of December 2013. The gross construction value is 1,462 million euro. The project is considered as FDI, as it lasts more than one year (731 days).

The enterprise has to quarterly report the construction work in the eight TTN questionnaires referred to the periods from 2012Q1 to 2013Q4, specifying in each questionnaire the project start and end dates, the counterpart country and the gross construction value.

In the questionnaire referred to the quarter in which the work end occurs (2013Q4), the reporting agent has also to report the net margin, which amounts to 150 million euro.

In the quarterly BoPs, the following transactions will be registered:

- 2012Q1 - FDI Equity Assets - investments: $(1,462 / 731 \text{ total days} * 91 \text{ days in the quarter}) = 182 \text{ million euro}$
- 2012Q2 - FDI Equity Assets - investments: 182 million euro
- ...
- 2013Q4 - FDI Equity Assets - investments: $(1,462 / 731 \text{ total days} * 92 \text{ days in the quarter}) = 184 \text{ million euro}$

FDI Equity Assets - disinvestments: 1,462 million euro

FDI income credits: 150 million euro.

D.2. Country experience: India's compilation of Education services

6.252. The potential for gain from rising cross-border exchanges in education sector for India has increased considerably with growing liberalization of trade in services. However, the present system of collection of information in India does not comprehensively report the trade in education services trends in all its dimensions and, therefore, it has been decided by DGCIS to conduct a survey on international trade in education services under the overall guidance of the Central Statistics Office, Ministry of Statistics & Programme Implementation with following objectives:

- i. To examine the overall pattern of trade flows in India's higher education services.
- ii. To analyze the major export and import services in higher education as per the four modes under GATS framework.
- iii. To analyze the direction of export and import of trade in higher education both country and regional level.
- iv. To identify the number of educational personnel (viz., faculties) engaged in trade in educational services.
- v. To identify the barriers to trade in education services at country level and in different categories of services provided.

6.253. The scope of the survey has been restricted to Higher Education services, i.e., *technical education, management education, medical education and general discipline*

(University level courses). The year 2010-11 has been finalized as the survey period, as it was recognized that all the financial information for that year has already been audited and could be accessible. The fieldwork of the survey as well as processing and compilation of data has been outsourced to the Indian Institute of Foreign Trade under the overall guidance and supervision of DGCIS.

6.254. *Coverage of the survey.* In the education sector, substantial volume of trade is currently taking place in higher education as indicated by global trends. Therefore, the scope has been restricted to Higher Education. In the Indian context, higher education normally refers to post-secondary education at sub-degree and university degree levels. However, in the present survey, *technical education, management education, medical education and general discipline* have been covered.

6.255. *Determination of the Representative Sample for the Survey.* In defining the representative sample for the study, all dimensions of trade in higher education services need to be clearly identified. This will also include the four categories of services defined under the GATS framework. For this purpose, all services relating to education have been compiled and categorized as Mode 1, Mode 2, Mode 3 and Mode 4, the details of which are shown in table 6.5.

Table 6.5
Categorization of services into the modes of supply in India

Category	Description
Mode 1: Cross Border Services	The service provider and recipient are located in two different countries. In other words, delivery of education services is done via internet, VSAT etc. The examples of this category of service trade include distance education, tele-education, education testing services etc. Courses offered by Indira Gandhi National Open University (IGNOU) in other Asian countries and education process outsourcing with remote tutoring from India (example Hughes Global Education etc.) are representative examples of India's exports under Mode 1.
Mode 2: Consumption abroad	The recipient travels to the country of the service provider. Movement of students from Nepal, Bangladesh, Kenya, and Sri Lanka etc. to Indian universities and technical colleges for higher education can be quoted in this context so far as export interests are concerned. Similarly, Indian students studying in foreign universities (US, UK, Australia) constitute the import interest items under this mode.
Mode 3: Commercial Presence	The service-providing institute moves to the recipient country in this case. Establishment of local branch campuses or creation of subsidiaries by foreign universities in other countries, course offerings by domestic private colleges leading to degrees at foreign universities, twinning arrangements, franchising etc. are among the common arrangements in this regard. For instance, the Birla Institute of Technology and Science, Pilani Dubai Campus, established in association with ETA-ASCON group in September 2000 and S. P. Jain Centre of Management centres in Dubai and Singapore, are examples under India's export interest items under this mode. So far as import is concerned, one can cite foreign institutions entering India through collaborative and franchise arrangements, for example, Indian School of Business tie-up with Kellogg, Wharton, and London Business School.
Mode 4: Movement of Natural Persons or professionals	Here the individual service providers, both independent service suppliers and employees of a reputed service supplier institute can move to the territory of the recipient country. The tenure can either be a short-term (e.g. two weeks) one or on a renewable long-term basis (e.g. three years). Time bound (e.g. semester / trimester) movement of faculties due to exchange agreements between two foreign institutes and movement of young Indian scholars to foreign universities (e.g. African Universities) on medium-term tenure are on the rise in recent period.

6.256. All the institutes/universities providing higher education have been identified and categorized into Public and Private Institutions and Universities. Further, these categories of institutions/universities have been segregated into those providing Technical education, Management education, Medical education and General discipline. A stratified sampling method was used to select the institutes/universities providing education services under each of the above categories of education. Given this requirement and the concentration of the geographical spread of the educational institutes/universities, eight locations have been selected for identifying the representative sample. These locations are: Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Manipal, Pune and Varanasi. Further, all the important Universities and Technical and Management Institutes in India (and not necessarily restricted to the selected list of cities) enrolling foreign students are within the coverage. These institutes have been short-listed based on their innovative programmes, international cooperation, faculty strength, academic performance, research capabilities and overall achievements.

6.257. *Questionnaire Development and Administration.* A questionnaire for the primary survey has been prepared to collect detailed information on trade (both export and import) in higher education from Indian Universities / Institutions. In consultations with various agencies like, the Department of Education, Ministry of Human Resource Development (MHRD), Foreign Exchange Department of RBI, Planning Commission and University Grants Commission and the Directorate General of Commercial Intelligence and Statistics (*DGCIS*). (See Annexure 2). The questionnaire has 16 subsections, covering among others (a) identification of the service provider, (b) transactions with non-residents, (c) employment by type of staff, (d) details of revenues / receipts from foreign universities / institutes (including foreign students studying in India and in-house Indian faculties visiting abroad), (e) details of expenses / payments to foreign universities / institutes (including Indian students studying abroad and foreign faculties visiting India), and (f) identification of trade barriers in higher education services. The data on revenue and expenditure is reported in home currency units, i.e., in INR.

6.258. *Tabulation of Collected Data.* The information collected through this survey have been compiled and tabulated in several tables covering:

- Exports and imports of education services by categories
- Exports and imports of education services by major trading partners
- Exports/Imports of Education Services by Major Trading Partners and Services
- Category Number of Foreign Student Inflow in India from Major Trading Partners
- Number of Indian Student outflow to Major Trading Partners
- Number of Foreign Faculties Inflow in India from Major Trading Partners
- Number of Indian Faculties Outflow to Major Trading Partners

D.3. Country experience: India's compilation of computer and information services

6.259. Given the interest of India in computer and information technology services exports (representing approximately two-thirds of their resident-non-resident services transactions); the Reserve Bank of India (RBI) has been conducting for the past six years a regular and detailed survey on these. The survey includes on the one hand questions relating to resident-non-resident services transactions (*i.e.* covering modes 1, 2 and 4) and on the other hand, services delivered through affiliates abroad. For determining the proportion of each mode of supply within the services transactions, survey respondents are asked to report the estimated

value of services provided through modes 1, 2 and 4 as shown below. As can be seen this information is sought both on a fiscal year basis as well as on a quarterly basis. No treatment different to what is applied to other results of this very detailed survey (*i.e.* for non-response etc.) is applied for modes of supply.

6.260. *India's experience: software.* In view of the growing importance of exports of Information Technology and Information Technology Enabled Services (IT & ITES), the Reserve Bank of India (RBI) first conducted a comprehensive survey of the firms engaged in information technology and computer services export activities with April 2002 – March 2003 as the reference period. Thereafter, it started conducting annual survey on software and IT exports services on regular basis from September 2008 and the latest survey in this sector was conducted for the reference period April 2010 – March 2011.

6.261. The survey is designed to collect detailed disaggregated level information on export of software services according to activity, type of services (on-site/off-site) and country of destination along with the four modes of supply as stipulated in General Agreement on Trade in Services (GATS).

6.262. For the purpose of this survey, the companies engaged in IT & ITES services exports are first classified into two major categories, namely, Computer Services and ITES/BPO services and each of these are again sub-divided into two classes as shown in table 6.6.

Table 6.6

Classification of IT & ITES companies in India

Computer Services	Information Technology Services
	Software Product Development
ITES/BPO services	BPO Services
	Engineering Services

6.263. The BPO services consists of twelve different types of activities, namely:

- i. Customer interaction services,
- ii. Finance and Accounting, auditing, book, keeping and tax consulting services,
- iii. HR Administration,
- iv. Procurements and logistics,
- v. Legal services,(including IP management services),
- vi. Business and corporate research,
- vii. Animation,
- viii. Gaming,
- ix. Medical transcription,
- x. Document Management,
- xi. Content development and management and publishing,
- xii. Pharmaceuticals and biotechnology.

6.264. Engineering services is composed of four major categories, namely, Embedded Solutions, Product Design Engineering (mechanical, electronics excluding software), Industrial automation & enterprise asset management and Architectural & other technical services while software products include Own software products license revenues, Resale of software and Offshore Product Development etc. Information on all these activities are collected and compiled in Indian Rupee as well as US \$. Information on export earnings from different destinations are also collected in this survey for compilation and publication.

With a view to compile statistics by the four GATS modes of supply of services, provision has also been made in the questionnaire to report export earnings by modes of service.

6.265. The survey also collects information on the software business of foreign subsidiaries/associates of Indian companies (foreign affiliates) under the heads of software business done in host country, locally, to India and to other countries, for the purpose of Foreign Affiliates Statistics (FATS). Indian companies are classified into four major activity categories, viz., IT services, Software product development, BPO services and Engineering services. Companies providing a combination of these services were classified under 'Others'. These multiservice providing companies remained the major source for generating software business outside India.

6.266. The statistics of foreign trade compiled from the annual survey on computer software and information technology services exports is also cross-checked and validated with the information collected independently by two other sources, namely, the National Association of Software and Services Companies (NASSCOM) and the non-physical (off-site) software exports figures collected through a different format called Softex. Information pertaining to the non-respondent units is estimated using appropriate statistical tool.

Box 6.2

Extract of the Indian Survey of Computer Software & IT Services Exports: 2009-2010

6. Exports - Modes of Supply

Total invoice on software and IT services exports as per the Modes of Supply during the reference period

Exports - Modes of Supply	Amount (₹)
(i) Services provided/ rendered to foreign entities/persons from Indian office (Cross border supply)	
(ii) Services provided/ rendered to foreign entities/persons while they are on visit to India	
(iii) Onsite services provided by deputing employees abroad	
Total	0

4. Exports - Modes of Supply

Total invoice on software and IT services exports as per the Modes of Supply during the reference period

Exports - Modes of Supply	April-June 2009 Invoice Value (Rupees)	July-Sep 2009 Invoice Value (Rupees)	Oct-Dec 2009 Invoice Value (Rupees)
(i) Services provided/ rendered to foreign entities/ persons from Indian office (Cross border supply)			
(ii) Services provided/ rendered to foreign entities/ persons while they are on visit to India			
(iii) Onsite services provided by deputing employees abroad			
Total	0	0	0

Source: Reserve Bank of India, 2011.

Chapter 7 Surveys of Persons and Households

7.1. *Scope.* This Chapter discusses the issues related to surveys design and their organization and describes relevant good practices. The Chapter promotes an integrated approach and cooperation between related statistical domains (e.g., BOP and tourism statistics). The Chapter first describes household surveys and their use in SITS compilation (sections A and B) and covers construction of the target population and sampling frame; conducting a household survey; measuring travelers' expenditure using a household survey; seasonality issues; and reference period. Section C covers Border surveys and provides details on organizing surveys at different border points, including airports, road borders, railways, and cruise ships. Section D provides an overview of Complementary surveys of travellers. Section describes Labour Force Surveys, particularly development of a labour force survey module for mode 4. Finally, section E includes Country practices.

A. General Description of Persons and Households Surveys

7.2. Surveys of persons and households are mainly used to compile transactions of international trade in services in which individuals are the major purchaser or supplier and can be relatively easily identified for survey sampling purposes; namely, for travel, tourism, transportation, and mode 4 transactions. A typical example of direct surveys of persons is the border survey of travellers which is used as a very important source of data for estimation of travel item of EBOPS. This survey is discussed in Section C.

7.3. Household surveys are the major data source for social and demographic statistics. For example, household surveys are the main source of data on a wide range of social and economic topics, while border surveys are extensively used for tourism statistics purposes. Therefore, an integrated approach to the use of such surveys for the SITS purposes is imperative. Following the basic principle of efficient statistical work – collect once, use many times – it is a good practice to design a survey results of which will be used for compilation of data in several statistical domains. To ensure the highest possible efficiency both household and border surveys should be designed in such a way that the collected data can be used for both tourism statistics and SITS purposes. This implies that the SITS compilers actively cooperate in all stages of the statistical process with the units responsible for the organization and conduct of such surveys. For example, such close cooperation is absolutely essential in border surveys which have to provide data for both SITS and tourism statistics (see also Chapter 3 on institutional arrangements). Cooperation with demographic statistics is important as well, for example, to ensure the proper use of population censuses in the context of the organization of the household surveys and as a benchmark in grossing-up their results. Household surveys can also be used to assist in the compilation of international transactions of transportation services, travel, tourism, and transactions involving mode 4 persons.

7.4. Household surveys provide access to persons by first selecting households. Household is defined as a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.¹⁵⁴

¹⁵⁴ SNA 2008, paragraph 24.12. SNA 2008 recognizes the importance of the household surveys, but, at the same time it is noted that the conventions adopted by survey statisticians and those of national accountants are not always the same. A household expenditure survey for example may not include estimates of imputed rental of owner-occupied dwellings or own account production. It may measure income after tax and measure

7.5. Compilers could transform household surveys into a sample of persons e.g. by the following procedure: At the beginning of the interview, the interviewer asks how many persons above a certain age are permanent members of the household. From this range of persons the target person (e.g. the oldest, the second-oldest, etc.) is chosen by a random procedure. The interview is conducted with this randomly chosen target person only.

7.6. Some surveys of persons and households, which can be used as sources of data for SITS, were primarily designed for use by other statistical domains. In particular, due to the unique nature of tourism (as described later in this chapter), sample surveys of households and of persons (e.g., border surveys) are often used to collect information for travel imports (debits) and tourism expenditures. Thus, as this chapter will frequently refer to the surveys conducted for tourism statistics, the SITS compiler should have knowledge of the basic tourism statistics concepts in order to make appropriate use such surveys for SITS purposes. Basic concepts of tourism statistics are provided in box 14.2 of chapter 14 of this Guide. For more detailed information, also see *International Recommendations for Tourism Statistics 2008* (IRTS 2008).¹⁵⁵

B. Household surveys and their uses in SITS

B.1. The household surveys: an overview

7.7. The internationally endorsed recommendations for the organization of the household sample surveys are contained in the UN publication *Designing Household Survey Samples: Practical Guidelines*.¹⁵⁶ The publication covers provides recommendations and good practices in such key topics as:

- i. Planning and execution of surveys;
- ii. Sampling strategies;
- iii. Sampling frames and master samples;
- iv. Documentation and evaluation of sample designs;
- v. Construction and use of sample weights;
- vi. Estimation of sampling errors for survey data;
- vii. Non-sampling errors in household surveys;
- viii. Data processing for household surveys.

7.8. The compilers should familiarize themselves with the recommendations contained in that publication in order to be in a better position to participate in the planning and conduct of the household surveys in their countries for the SITS purposes. In particular, it should be noted that the UN recommendations cover all essentials of the conceptual foundations of the household sample surveys and identify good practices of their implementation. Examples of the recommended good practices are:

- i. in sample design, strive, as much as possible, for simplicity as opposed to complexity;

expenditure on a cash and not on an accrual basis. The SITS compiler should be aware of these limitations of the household surveys.

¹⁵⁵ See IRTS 2008, paragraphs 2.4 – 2.12.

¹⁵⁶ Available at: http://unstats.un.org/unsd/publication/seriesf/Seriesf_98e.pdf.

- ii. use two-stage sample design;
- iii. budget permitting, choose margin of error, or precision level, for key estimate at 10 percent and at 95 per cent level of confidence, otherwise, settle for 12-15 percent relative error;
- iv. limit number of estimation domains to as few as absolutely necessary (so as to bring the sample size to a manageable level);
- v. strive for a large number—several hundred—of clusters (or of PSUs if two stages);
- vi. use small cluster sizes (10-15 households) etc.

7.9. As household surveys are a widely used statistical tool many countries developed their own detailed methodological guidelines on their design and conduct¹⁵⁷. Such guidelines are periodically reviewed and amended as necessary. It is a good practice that SITS compilers actively participate in this process and develop amendments which would ensure that needs of SITS are taken into account.

B.2. *Household surveys and SITS*

7.10. *Target population and a sampling frame.* All residents are attached to one resident household and only one. Therefore, in order to survey residents, resident households can be used as the sampling frame, as it will ensure total coverage, if the sampling frame is up-to-date. Residents will be asked (among other questions) about their trips abroad, the circumstances and characteristics of the trips, and the expenditure attached to them (products and values). It should be underlined that travel (and tourism) refers to individuals, not to households. Nevertheless, when persons travel together and belong to the same household, data on (shared) expenditure by the travel party can be collected. Households are used exclusively for selection purposes, but not for providing results: households as such do not travel.

7.11. *Conduct of survey.* The information can be collected by interview, through the visit of an interviewer to the household. This is the most common procedure, as it facilitates the control of the survey; and also the possibility for the persons been interviewed to check some information, for instance credit card invoices, etc. The interviewer can collect the information on paper questionnaires, or using some electronic device which makes it possible to have a first control of the consistency of the information. Such procedures can be costly; as a consequence some countries use rather telephone interviews: the procedure is cheaper, but with less possibility of asking more sophisticated questions.

7.12. *Measuring travelers' expenditures.* As said, travel (and tourism consumption) is expenditure oriented; its value per person in a given period will depend on the number of trips undertaken in the period, their characteristics (destination, duration, purpose (separating clearly tourism purposes from other travel purposes), forms of accommodation used,

¹⁵⁷ An example, household surveys are extensively treated in the Statistics Canada publication "Survey Methods and Practices", available at: <http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=12-587-X>.

organization (with or without package), traveling alone or in a party, with persons of the household or with others, etc.), and the average expenditure per person per day attached to these characteristics; due to these circumstances, different designs are possible: to observe separately and with different frequencies trips and average expenditure per day; or to observe both, flows and expenditure, simultaneously using a unique questionnaire.

7.13. *Challenges in measuring travelers expenditures (by mode of supply).* Regarding the measurement of expenditure by travelers, there are a number of challenges in obtaining data on trade in service by modes of supply. Travelers frequently share expenditure within a group of persons traveling together: this is very frequent under mode of supply 2. Travelers do not always know the amount of expenditure attached to their trip as they do not pay directly for all the expenses (accommodation, transportation, etc.): there might be agreements in receiving some implicit or explicit payment in kind (transport, meals, accommodation); this happens under mode 2 but this case might be even more frequent for mode of supply 4. Travelers usually perceive their expenditure by purpose, not by products, so that, for instance, separating goods from services might not be as straightforward as it seems (medical expenses include drugs and services, education expenses include books and other services, transport might include goods (like gas), etc.). Travelers on mode 4 that move frequently from their country of residence to their country of work might not have a clear perception of the expenditure associated with each of their trips (in particular for expenditure such as accommodation, etc.). To collect information concerning mode 4 it can be considered to add a specific question in a household survey about the reason for the trip (“business trip”). In combination with the socio-demographic characteristic “self-employed” it can be used as a basis. If such a survey is conducted as a telephone sample compilers have to be aware that self employed persons are difficult to reach and therefore consider using a specific sample of mobile phone numbers in addition.

7.14. *Seasonality of travel and the survey organization.* Travel is often highly seasonal; it cannot be observed over a reduced period of time, and then be extrapolated to the whole year as travel, in particular that for personal reason, will be influenced by climate conditions in the country of origin and of destination, periods of vacation, etc. As a consequence, frequent observations will be required. It is a good practice to collect information on a continuous basis, though results might be produced with a different frequency: quarterly, or with other types of groupings, for instance, the peak season, and the low season, though seasonality might be different depending on the purpose of the trip (business, work, study, personal, etc.).

7.15. *Reference period.* Additionally, because of memory effects, the period of reference to be used, both regarding the trips and the expenditure associated to them, has to be very short. This Guide considers as a good practice if a month is used as a reference period in order to reduce telescopic errors (improper date assigned to trips) and recalling errors (improper characteristics and expenditure)¹⁵⁸. As a consequence, because most persons might not have made any trip during such a short period of reference, the selected sample should be sufficiently large so as to collect enough valid information. [need details/example of practice]

7.16. *Using a tourism module.* It is possible to attach a “travel/tourism” module to an existing household survey (usually, a labor force survey or an income and expenditure

¹⁵⁸ See, for example: Memory Effect in the Spanish Domestic and Outbound Tourism Survey (FAMILITUR) A paper presented by Teresa Guardia and Sandra Garcia from the Spanish Instituto de Estudios Turísticos to the OECD 9th International Forum on Tourism Statistics, Paris, November 2008.

survey), or to a design specific observation procedures to observe the required variables. Because of the particularities of tourism and travel mentioned above, the first alternative, though usually considered initially by countries, does not result in obtaining all necessary data and should be complemented by a specific survey to observe tourism, and travel.

7.17. *Issues to consider.* As to the process of selecting households, individuals and trips, various possibilities are conceivable and each of them has their pros and their cons.

7.18. Regarding the selection of households:

i. All households might be selected with equal probability; or with different probabilities, taking into consideration differences in propensity to travel (case of the rural population for instance; or when countries have a stratified universe according to level of income as higher income is often positively correlated with propensity to travel); or

ii. A moving panel of households can be used, that is renewed periodically; this allows to design profiles of behavior overtime; nevertheless, persons who frequently travel and thus are absent when requested to answer the survey will tend to be substituted by more sedentary persons that tend to travel less, thus skewing the results of the survey.

7.19. Regarding the selection of informants:

i. Select randomly one person within the household that will inform on his/her trips and expenditure; the drawback is that much of the cost of visiting a household will be lost, particularly taking into consideration that traveling over a short period is not so frequent so that the randomly selected person might not have travelled but other persons of the household might have;

ii. Include only persons over a certain threshold (10 years, 15 years,...); this looks attractive, but small children usually travel with other persons of the household, and though the children usually do not pay themselves for their expenditure, their participating in a travel party decreases the average expenditure per person per day of all the members of the party; or

iii. Include everybody: this is often the method followed.

7.20. Regarding the selection of trips:

i. All trips can be selected both for description of the trips taken and the attached expenditure; this is often the method followed but when some persons travel frequently, it might be a drawback with too large a questionnaire (but this might not be so frequent if restricting to outbound trips); or

ii. All trips can be counted (outbound and domestic) but the characteristics of the trip and the expenditure are only collected for one of them (usually, the more recent one); this is usually the principle mostly followed by compilers.

7.21. Regarding the actual information being collected through such surveys, it is important to define the following characteristics and breakdowns:

i. *The characteristics of trips* (such as main purpose, duration, origin and destination, modes or transport, and others. This usually does not present major difficulties. This information has to be collected for the trip on which information is collected, and this might differ from person to person within the same household, even though they have travelled in the same travel party for this trip (e.g. their purpose of trip might be different, and also their expenditure);

ii. *The characteristics of expenditure*: Expenditure to be included refers not only to that part directly paid for by the travelers themselves, but also that paid by others for their benefit. This is true, both for travel and for tourism expenditure. The consequence is that, for each trip, and each category of expenditure, it is necessary to ask: (i) whether there has been an expenditure, and the value of expenditure, (ii) who has paid for it (oneself, a business, the government, other person of the travel party, another person, ...), (iii) the type of payment used (such as credit cards, cash, travelers checks, etc.), (iv) the number of persons to which the reported expenditure corresponded to, as a traveler might pay for him/herself and for any other persons within a travel party

iii. *The breakdown of expenditure*. Finally, it is important to define the breakdown of expenditure: in tourism statistics, tourism expenditure should be broken down into the following functional categories. These categories have been defined so as to facilitate response.

- a. Package travel, package holidays and package tours
 - 1) Accommodation
 - 2) Food and drink
 - 3) Local transport
 - 4) International transport
 - 5) Recreation, culture and sporting activities
 - 6) Shopping
 - 7) Others

In Balance of Payments and in International Trade in Services, the recommended breakdown is:

- b. International transport
- c. Travel, broken down into the following categories:
 - 1) Goods
 - 2) Local transport services
 - 3) Accommodation services
 - 4) Food-serving services
 - 5) Other services

7.22. *Difference in treatment of expenditures in tourism statistics and EBOPS*. The breakdowns of expenditures in tourism statistics and SITS are not totally equivalent, as the orientation of the tourism statistics classification is by purpose, whereas in SITS it is by types of products; meaning, for example, that expenditure in fuel for the car would be classified as “transport” in tourism statistics, and in “goods” in SITS.¹⁵⁹

¹⁵⁹ IRTS 2008, paragraphs 5.37-5.43.

7.23. The major difference between trade in services statistics and tourism statistics is in the treatment of “international transport”. SITS travel does not include expenditure for international transport. In tourism statistics, however, expenditure on international transportation is included in “tourism expenditure”. Additionally, the data provided by visitors does not correspond necessarily to what figures in outbound tourism consumption as part of the service might be provided by a resident, a fact that requires the use of complementary information that the traveler might not be in a position to provide (an adjustment that needs to be done by the compiler).

7.24. Finally, the information collected from travelers/visitors on packages requires an additional analysis as the treatment in tourism statistics and the one followed in Balance of Payments and Statistics of International Trade in Services differ.¹⁶⁰

C. Border surveys

7.25. Border surveys are surveys applied to travelers as they enter or leave the country. Visitors/travelers are counted when they enter or leave the country. In 2005 UNWTO carried out a study “Tourism as an International Traded Services” in which 26 out of the 34 responding countries (in a sample of 48 countries considered to be representative of a wider group of countries) specified using border surveys.

7.26. *When to survey travelers?* The circumstances in which information on travelers are collected are relevant for the quality of the data. In the case of inbound flows, this information has to be collected from the traveler as he/she is leaving the country visited. In the case of outbound flows, this information can be collected, either at the moment of re-entering the country of residence, or after the trip, within the usual environment of the traveler. This allows observing actual expenditure because the visitors/travellers are interviewed once this expenditure has already taken place. If they would be asked about their expenditure before their trip finalizes (e.g. at entrance for inbound trips and at exit for outbound trips), then we would be observing their expected expenditure. The particular case of inbound travelers makes the observation challenging, as time is short upon departure, and the traveler might not be in the appropriate mood to answer a complicated questionnaire. Additionally, if the flows of certain categories of travelers are small, it would possibly require a sample of a relatively bigger size or a deliberate over-sampling with suitable correction methods. It is strongly recommended that a specific set of questions is designed to enhance the accuracy of expenditure estimates and break them down into categories.¹⁶¹ The UNWTO *Compendium of Tourism Statistics* presents a broad range of data and indicators that are being collected by a significant number of countries in line with the IRTS 2008.

7.27. *Organization of border surveys.* Border surveys need to have very different organizations depending on whether they refer to airports, land borders, sea ports, ports on rivers, or to the case of cruises. The more extended practice refers to airports. The type of organization of the surveys, the sample design, and the questions that can be asked differ also

¹⁶⁰ See MSITS 2010, Box III.5 relationship between travel and tourism

¹⁶¹ UNWTO is developing a model border survey to be included in the IRTS 2008 Compilation Guide. The model questionnaire covers 5 parts: A. - Travellers, B.- Means of transport, C. - About your stay, D. - Acquisition of services in your country or other country before arriving in our country, E. - Acquisition of goods and services in our country booked or paid either before, during or after the trip.

extensively, because of the different circumstances in which the surveys can be held, in particular the time that can be assigned to the interview or to filling in the questionnaire.

7.28. *Means of conducting border surveys.* As other surveys the border survey can be conducted through different means such as (i) distributing the questionnaires on paper to pre-selected travelers and having them answer (provided the questionnaires are available in different languages, with clear instructions and easy to understand); (ii) using a paper questionnaire, but filled by an interviewer; or finally, (iii) an electronic questionnaire with an interviewer using a handheld device and collecting the information and feeding it directly into the a validation program. In comparison to a household survey, border surveys have the characteristic that it is impossible to get back to the informant if some information turns out to be inconsistent: once the inbound traveler has left, there is no way of getting back in touch with him/her¹⁶² so that the questionnaires should be clear enough to minimize errors in the provision of the required information. For example, a well-designed IT questionnaire to be filled directly on a tablet computer by an inbound traveller as he is leaving the country visited - at some strategic location where the traveller has to wait anyway - could facilitate the conduction of face to face border/travel surveys¹⁶³.

7.29. *Treatment of traveling parties.* Because travelers often travel in parties, in which the most important expenditures are shared, some countries have tried to use different questionnaires for persons traveling alone and for those traveling in parties so as to facilitate the collection of information (since common expenditure would only be collected once for the whole party, while personal characteristics of party members need to be collected for each of them. This might be a good practice, especially if dealing with travel for recreation purposes.

7.30. *Working with specific characteristics.* For borders in which the flow of travelers is almost permanent (land borders, airports), and in which it is difficult to maintain the periods of observation overnight, it may be useful to work with specific characteristics (for instance, in air, given origins or destinations often group flights in certain time brackets).

7.31. *Taking into account seasonality.* Flows of travelers over the border and their respective characteristics and associated expenditure are subject to important seasonality. This means that when a survey is planned, it should cover a period of a whole year because behaviours cannot be extrapolated from one period of the year to the other. As in the case of the household surveys it is a good practice to collect information on a continuous basis, though results might be produced with a different frequency.

7.32. Finally, an observation should be made on the survey procedures themselves: when observing the flows of persons over the border (with the exception of cruise ships), it is not possible to determine a priori whether the person is a resident (leaving or returning) or a non-resident (arriving or leaving) yet only those having terminated a trip should be interviewed

¹⁶² Some countries have tried returnable questionnaires, but this has not proved being very useful, as those that actually return it are very few, and possibly do not have the same profile as those that neglect to answer. However, New Zealand developed an on-line questionnaire where random sampling is done after airport security, and respondent provide information at a later stage.

¹⁶³ The Computer-Assisted Personal Interviewing system (CAPI) technique was used in 2013 in Morocco for the first time in the survey on travel conducted by the Ministry of Tourism at borders. The CAPI technique ensures conducting interviews by means of tablet computers in which questionnaires are installed. Answers are entered in computer and data is sent in online to the database after predefined checks and control processes. This sort of tool helps improve quality, reduce costs and save time.

on their actual trip. The imbalance in the questionnaire responses corresponding to the different situations might result in false information.

7.33. Regarding the collection of information on expenditure, generally, the same comments as those made with respect to the household surveys are valid. Care should be taken nevertheless, that the extension and detail on expenditure that can be collected will depend to a large extent on the duration that can be assigned to the interview. For example, in the surveys at a land border, the time that can be dedicated to the interview is very short so that it might not be possible to enter in many details and the questionnaire should contain only the most essential types of questions.

C.1. Details on the organization of the surveys at different border points

7.34. *Airports.* The observation of travel flows through airports and their corresponding expenditure should be relatively straightforward as the flows are clearly defined (various types of administrative records should be available from airlines, customs control, airport administration, etc.) and travelers have time to answer (either when they leave: after checking in and before boarding; or when they arrive: after disembarking and before leaving the terminal). This makes it possible to interview them at the end of their trip and observe the corresponding expenditure. In some cases, it might also be possible to distribute questionnaires on board the aircraft, before arriving or just after take-off, provided that all airlines cooperate.

7.35. In the case of airports, the statistical design should take into account the information provided by the airlines on anticipated flights, their origin or destination, their capacity and expected number of passengers. On this basis, and making some assumptions on the proportions of passengers residing abroad or in the country of reference, it is possible to define a sample. For a given flight, some countries might decide to survey all passengers, whereas others prefer selecting respondents (on a quota basis or systematically), or even allow the interviewers to select the persons they interview. For the sake of completeness and accuracy, it is preferable to interview all persons of a selected flight. Quotas, usually based on country of residence, provide skewed results, as the country of residence is not a good explanatory variable of expenditure, if not associated with others, such as duration of stay or purpose of trip. In the case of interviewers selecting informants, the skew can be all the greater.

7.36. *Land borders (road).* The situation at land borders (road) is very different from that previously described for airports as, frequently, the flows of travelers over the border is not well known, either because there is no control at all (such as the case of the European Schengen countries), or because the control is limited to a certain subset of flows (as is the case with the existence of bilateral agreements that often facilitate the movements of persons living in the vicinity of the border post), or even because of the physical impossibility of the border control authority to control all the (legal or illegal) border-crossings. Therefore, it is a good practice to measure the flows of persons over the border and to qualify them subsequently as either visitors or other categories of travelers. This might be done automatically with counting devices that capture vehicles (private cars, buses, trucks), to which an average number of passengers can be imputed, and also capture the license plate, from which the country of residence of passengers in private cars can be derived. In the case of buses, in most countries, a list of passengers and their nationality should usually be available.

7.37. *Land borders (railways)* In the case of land borders crossed on international railways, the case is relatively similar to that of airports. The railway companies should be able to provide the number of passengers. A sample could be designed, on the basis for example of the persons seated in a given place, which is the kind of design that railway companies use for their satisfaction surveys.

7.38. *Cruise ships.* For some countries, such as those in the Caribbean, travelers arriving aboard a cruise ship represent a very significant share of total arrivals and travel expenditure. The number of passengers aboard and their characteristics in terms of residence are known, as well as the characteristics of the crew. In the case of cruise ships, ferries, yachts and all type of recreational vessels, the captain is usually requested to provide the port authority with a list of passengers and crew on board (a manifest), indicating name, surname, nationality, passport number, and any additional information that authorities might decide to request. Expenditure in the country visited occurs when cruise passengers disembark, although they might also purchase packages on board to visit places of interest. Cruise ships necessarily use specific moorings, and embarking and disembarking are controlled by customs officers. It is a good practice to apply a simplified questionnaire, either to all passengers or to a sample, in order to collect information on their expenditure.

D. Complementary surveys of travelers

7.39. It is also possible to try to survey non-resident travelers either in places of accommodation mainly (hotels and other kinds of accommodation) or in sites of tourism interest. Although this type of procedures presents some limitations many countries use it as an alternative/complement in cases where border control systems are incomplete or not reliable.

7.40. The first challenge is to identify the non-residents among the guests of the means of accommodation. Also, in the case of the observation of travelers at the collective accommodation, two major limitations usually exist. First of all, not all travelers stay at collective accommodation. Studies in many countries have shown that the form of accommodation is a determinant of average expenditure per day, so that such variable observed for travelers staying at collective accommodation cannot be extrapolated to other travelers. Another limitation is associated with the fact that when surveying travelers at places of accommodation, they still have not terminated their stay, so that their average expenditure per day cannot be extrapolated to their expected length of stay as expenditure is not uniformly spread over the whole duration. Additionally, a traveler on a unique trip might use more than one hotel, a situation that alters the probabilities of being selected.

7.41. A similar situation occurs in the case of surveys at visitor attraction where the drawbacks are as follows: not all visitors visit those attractions, the probability of visiting an attraction is not known, and a given visitor might visit more than one attraction. As a consequence, information based on surveys at visitor attraction could be biased. Any derived information for the whole population of international travelers or visitors should take into account this bias.

7.42. If complementary surveys are used it is a good practice to design the survey questionnaire in a such way that the information on the breakdown of the expenditures can be collected for both SITS and tourism statistics purposes, namely on the consumed services of: (i) museums, (ii) theatres, (iii) heritage sites, (iv) leisure parks, (v) attending a festival, and (vi) type of food-serving services (in hotel, special restaurants). Also, information on purpose

of trip, both for personal purposes, and for business and professional purposes should be collected as will. The latter will be further described in the section on mode 4 (rf. part III).

E. Labour Force Surveys¹⁶⁴

7.43. MSITS 2010 sees the use labour-force surveys as another possible source of information on mode 4. A limited number of questions on (recent) visits abroad by household members for the purpose of work could be added, including questions about the contracting parties, the duration and forms of payment. Such questions would also enable the identification of Mode 4 types of visits separately from that of international labour mobility.

7.44. Although this option may have its merits, the precision of the resulting estimates, may represent a limitation to their usefulness because the sampling may be not adequate with respect to the population of interest. Labour force surveys are widespread and reasonably standardized. This possibility may be mainly relevant for sending countries for mode 4 which cover contractual services supplier and those travelling for negotiating purposes. In the case of intra-corporate movements as well as migration of self-employed persons, such an option could be relevant for receiving countries as well, but with a different set of questions. However for those countries/regions where mode 4 is potentially important and/or the population is relatively well covered by the sample, it may prove useful to add appropriate questions in the surveys such as proposed below. These questions should be designed to make possible the identification of mode 4 types of movements separately from international labour migration. A specific module could also be developed as proposed in the same line as the one proposed by ILO for labour migration.

7.45. Generally, labour force surveys can identify the individuals in the household that are self-employed (employers or not) or employees, as well as the occupation of their (main) job and the industry or the type of production of the employer if the individual is an employee (and in some instances the size of the company), or that of the self-employed persons. This is of interest in the context of mode 4. However the important factor for identifying mode 4 is whether the individual went abroad in the context of his/her work, but remaining based in the country where his place of employment is.¹⁶⁵ (see box V.2 in MSITS 2010 and chapter 1).

E.1. Developing a labour force survey module on mode 4

7.46. In order to identify such movements, the following types of questions could be added to the questionnaire (or developed in a specific labour force survey module on mode 4) as shown in box 7.1.

¹⁶⁴ For more detailed information on the results, common practices, methods and definitions of the European Labour Force Survey, see the EU LFS dedicated section on Eurostat's website at: http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/introduction.

¹⁶⁵ MSITS 2010 box V.2.

Box 7.1

Sample questions for inclusion on a labour force survey module on mode 4

The following questions could be included for "sending" countries:

- A. At any time in the past year [or other reference period] did you work in a country other than your country of residence? Y/N
- B. Were you employed by an employment agency? Y/N If yes in your country of origin or the country where you worked?
- C. If you are an employee, in the past year were you employed in a country outside your country of residence? Y/N.
- D. If so, in which country is your employer?

The following questions would then be necessary to capture further information on contractual service suppliers (i.e. those who are self-employed, or those who are resident and employed in the compiling country, i.e. those who replied "No" to question 2.1):

- E. In the context of your work did you travel abroad in the past year? Y/N
- F. How long did you stay abroad?
- G. How many trips did this entail?
- H. Did you travel abroad to provide a service (or fulfil a service contract) in the destination country:
 - i. with a third-part client? Y/N
 - ii. was it a legal entity? Y/N
 - iii. was it a household? Y/N
 - iv. with an affiliated firm? Y/N

While it may be even more difficult to obtain such information, it may be of interest to obtain further data as follows:

- v. Did you travel abroad to negotiate a contract? Y/N
- vi. Was it a service contract? Y/N
- vii. For the establishment of an affiliate/branch in the visited country? Y/N

Although this may be questionable from a statistical methodology viewpoint (e.g. double counting, how to interpret and extrapolate information), some questions could also be added to identify if an employee travelled abroad on his/her own, or with colleagues:

- I. If you are an employee, did you travel with some of your colleagues? Y/N If so how many? (However it should be possible to design processing algorithms to avoid double-counting, which can be a serious problem.)

In a similar way one could ask a self-employed/employer the following question:

- J. If you are an employer did you send some of your employees to fulfil a service contract with a client abroad? Y/N If so, how many?

From the perspective of "receiving" countries it may also be useful to gather information for intra-corporate transferees and self-employed migrants. First the identification of the country of residence (origin or in last period) may be a first indication. If the individual comes from a foreign country, then the following questions would be useful:

- K. For employees, if you migrated for employment purposes, did you come to work in an enterprise affiliated with your previous employer?
- L. If you are self-employed did you enter this country to develop a business?
However, it is recognised that such an approach cannot be generally adopted without a thorough analysis of the importance of the different mode 4 categories for a country. Some are more concerned with the fact that their workers are temporarily sent abroad to fulfil services contracts, whereas others are more in the position of receiving many migrating self-employed persons, or intra-corporate movements of personnel (i.e. incoming). In addition this may be limited to a specific region within a country; and such an additional module may then only be envisaged for respondents of that particular region.

E.2. Country experience: EU LFS data

7.47. The European Union (EU) LFS covers all citizens living in private households and excludes those in collective households, such as boarding houses, residence halls and hospitals. The EU LFS is administered in 28 Member States as well as in four Candidate Countries and two EFTA countries. The definitions used are based on international recommendations by the International Labour Organization (ILO).¹⁶⁶ Additionally, LFS is using common classifications;¹⁶⁷ e.g., NACE, ISCO-88(Com), ISCED, NUTS and the same set of characteristics is recorded in each country. Nevertheless, country specific national deviations might exist¹⁶⁸ whereas country sheets contain information on conceptual, methodological or organizational changes.

7.48. The EU-LFS¹⁶⁹ provides annual and quarterly results on labour participation of persons aged 15 and over as well unemployed people. It covers residents in private households currently in thirty-three countries (EU-28, three EFTA countries (Iceland, Norway, Switzerland) and Former Yugoslav Republic of Macedonia and Turkey. The NSIs of the Member States are responsible for designing national questionnaires, drawing the sample, conducting interviews and sending results to Eurostat. Each quarter around 1.8 million interviews are conducted throughout the participating countries to obtain statistical information for some 100 variables. Due to the diversity of information and the large sample size, the EU-LFS is also an important source for other European statistics; e.g., education statistics. The EU-LFS data collection covers demographic background, labour status, employment characteristics of the main job, hours worked, employment characteristics of the second job, time-related underemployment, search for employment, education and training, previous work experience of persons not in employment, situation one year before the survey, main labour status and income.

¹⁶⁶ Further information on:

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/EU_labour_force_survey_%E2%80%93_data_and_publication.

¹⁶⁷ The classification of EU LFS results is conducted in accordance with the international systems. For more information:

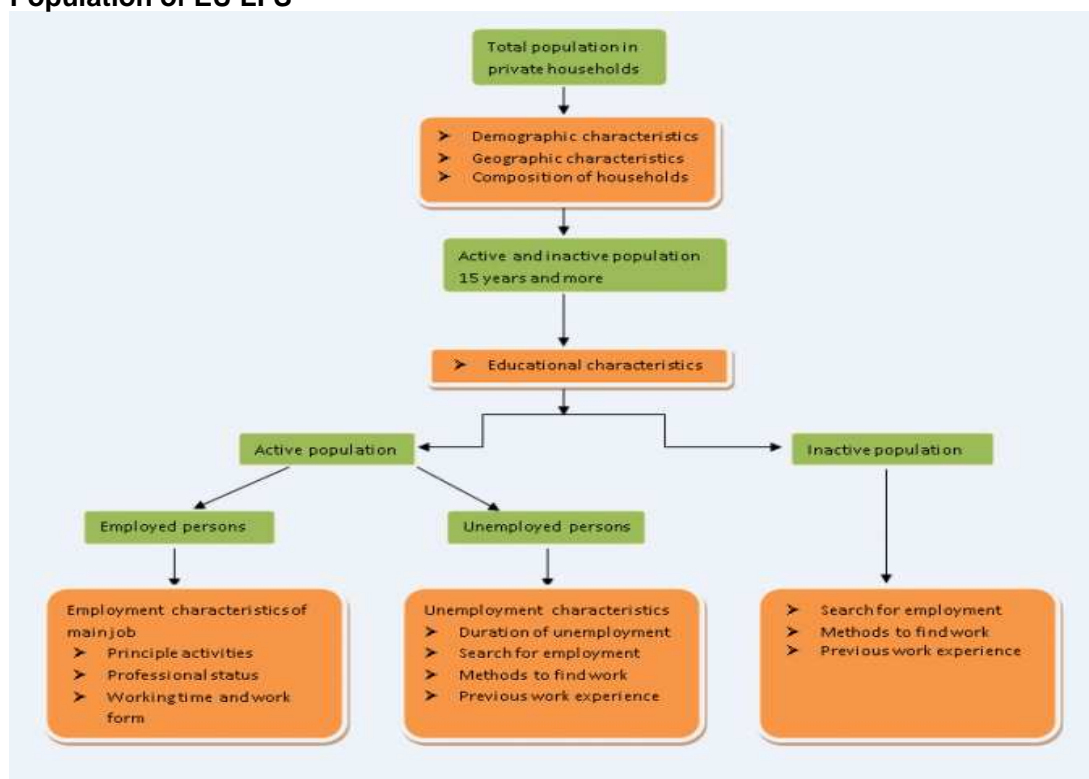
http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/methodology/classifications

¹⁶⁸ More information: Report from the Commission to the European Parliament and the Council on the implementation of Council Regulation (EC) No 577/98 COM (2012)701 final.

Previous reports were published in 2010 (report and annex), 2007 (report and annex), 2003 and 2000. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0046:FIN:EN:PDF>.

¹⁶⁹ The EU-LFS is conducted by the national statistical institutes in accordance with Council Regulation (EEC) No. 577/98 of 9 March 1998 and the data are centrally processed by Eurostat.

Figure 7.1
Population of EU LFS



7.49. Demographic data are gathered for population of all ages, questions relating to labour market status are restricted to persons in the age group 15 years or older. The LFS consists of tables for LFS main indicators, quarterly and annual survey results, specific topics and ad-hoc modules.¹⁷⁰ Explanatory notes and codes list and the full bench of variables are available on the website dedicated to EU-LFS.¹⁷¹ Usually, data is acquired through a series of personal interviews though telephone interviews, web interviews and self-administered questionnaires are also common.¹⁷² Part of the data can be supplied by information from alternative sources; including administrative registers e.g. population registers, population census as well list of addresses from postal authorities, registers on new dwellings, etc. The sampling units are dwellings, households or individuals depending on the sampling frame.¹⁷³ For stratification

¹⁷⁰ http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/EU_labour_force_survey_%E2%80%93_data_and_publication#Dedicated_section
http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/documents/EU_LFS_explanatory_notes_from_2012_onwards.pdf and
http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/documents/EU_LFS_Methods_and_Definitions_2001.pdf

¹⁷¹ <http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/lfs> and
http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/documents/EULFS_Database_UserGuide.pdf.

¹⁷² Participation in the survey is compulsory in BE, DE, EL, ES, FR, IT, CY, MT, AT, PT and NO.

¹⁷³ The sample design and rotation patterns are not fully harmonized. Different schemes are used to sample the units ranging from simple random sampling to complex stratified multi-stage sampling methods of clusters. Most countries use a variant of a two-stage stratified random sampling of households. All of the Member States apply a rotating pattern so that part of the observations can be directly paired to the observations one survey instance earlier. These rotating patterns range from 2-() (participating 2 quarters consecutively before leaving the sample) through 2-(2)-2 (2 quarters, then skipped for 2 quarters and finally participating for another 2 quarters) to 8-().

countries use either the region or nationally defined areas, as stratification variable. The degree of urbanization is also common for stratification whereas some countries stratify including information from the registers. The EU-LFS (and in particular household surveys) satisfy several purposes for different statistical domains and policy holders and therefore could be also expanded to other variables (see also Chapter 16). The quality of the data is regularly monitored through yearly Quality report of the European Union.

E.3. Country experience: Italy - border sample survey

7.50. In 1996 Italy launched an extensive border sample survey, which, until 2007, was conducted by the Italian Foreign Exchange Office, an organization that merged with the Bank of Italy on 1 January 2008. The size of the survey and its sample design enables the production of high-quality analytical statistics on many aspects of international tourism in the country, in line with the methodological standards set by international bodies.

7.51. *Motivations and objectives of the survey.* The relevant size of international tourist flows, highlighting the importance of the phenomenon in Italy, requires the establishment of a complex survey system, in order to overcome the difficulties arising from the large number of parties involved, both in terms of supply (primarily accommodation facilities) and, above all, in terms of demand (travelers). Other difficulties in the estimation of tourist expenditure arise out of the liberalization of trade and financial relations with foreign countries and the Schengen agreement, which abolished border controls between member countries. The intended objectives of the change in the data collection system are essentially: (i) Improved quality of the statistics of the “Travel” item of the balance of payments and a better adherence to statistical standards established at the international level and (ii) the provision of disaggregated data on a large number of characteristics of the tourism market, for use by central and local government bodies, the tourism industry and researchers. These objectives are partly a consequence of the fact that the formerly used data collection system based on bank reports resulted in inaccurate temporal and geographical allocation of transactions and underestimation of gross flows due to the practices of clearing regulations. Moreover, bank reporting systems missed to provide detailed information on many characteristics of tourism which are essential for a proper and thorough analysis.

7.52. *The methodology of the survey.* The technique used for the collection Travel data (“inbound-outbound border survey” in the literature) consists in interviewing a representative sample of travellers, both residents and non-residents, in transit at the Italian borders, while at the same time estimating the number and nationality of travellers in transit. The sampling is carried out independently at each type of border (roads, railways, international airports and ports), at border points that are selected as representative. The general logic of the survey provides estimates of expenditure on international tourism in Italy through the application of two distinct operations at border crossing points chosen: the counting operation and the interview.

7.53. The counting operation is mostly based on the technique of systematic sampling, that is, with the observation of one unit each “n”, with “n” predetermined. The counts provide the number of international travellers at each border point disaggregated by country of residence. The counting operation is necessitated by the lack of administrative information on physical flows of travellers with the required level of coverage, detail and timeliness. The face-to-face interviews provide the estimate of the expense and a set of attributes that allow its disaggregation and qualification. The interviews are conducted using a structured questionnaire submitted to a random sample of travellers at the end of the stay abroad (i.e.

when residents are re-entering Italy and non-residents are leaving it). This technique involves fewer errors in the respondents' memory of the expenses incurred than, for example, does a telephone survey conducted some time after the travel is complete. The questionnaire is the same for all border points. The main information - with varying levels of detail - that is requested of the traveller include:

- i. Sex, age and occupation
- ii. Location
- iii. Means of transport used (with possible detail of the airline or ship used)
- iv. Reason for the trip (if "vacation", the type of holiday)
- v. Place visited (foreign country for residents of Italy, Italian province for residents abroad)
- vi. Number of nights spent during the trip
- vii. Type of accommodation used
- viii. Travel arrangements (inclusive or not inclusive)
- ix. Total expenditure, broken down by type of product (transportation, lodging, restaurants, shopping and other services)
- x. Method of payment
- xi. Level of satisfaction about various aspects of the place visited and of the stay

7.54. In 2011, 145,000 interviews per year, or about 1.1 per thousand of total Italian and foreign travellers crossing the borders of the country, and about 1,550,000 counts of travellers, have been carried out.

7.55. The sample is stratified by different variables for each type of border. The stratification variable "direction", with the two modalities "to Italy" and "to abroad" and the variable "type of carrier", with four modalities (road, rail, air and sea), are recorded exhaustively; i.e., respondents are Italian and foreign travellers across all types of borders. The survey covers 82 border points (42 for roads, 5 for rail, 24 for airports and 11 for ports), i.e. the most important in terms of annual flow of foreign travellers, although a limited number of small border points were selected to capture origin-destination routes that were otherwise poorly represented in the survey. The selection was based on ISTAT data when the survey was begun, and thereafter updated through the evidence of the border survey itself, which monitors some border points on a rotating basis. The border points considered cover the percentages of the total, according to ISTAT and ENAC (National Civil Aviation Authority) data, shown in table 7.1.

Table 7.1.
Percentages covered by Italy's border survey

Border Type	Percentage Coverage
Road	72
Port	91
Airport	95
Rail	98

7.56. In the first year of conducting the survey (1996), the sample of road crossings covered 90% of the total; since 1997 the number of crossings sampled was reduced to

optimize costs. Cluster analysis technique has been used to rule out the minor crossings in order to minimize the loss of information. For road border points, the other stratification variables are the days of collection (whose categories are individual days of the month), the time slot (with the three categories of morning, afternoon and night) and day of the week (with the two categories of weekdays and holidays). For these variables, a random-based selection approach is adopted. As will be shown below, due to special logistic conditions, sampling of the “time slot” dimension used for road crossings is also adopted at the airports of Rome Fiumicino and Milan Malpensa.

7.57. For the remaining border points, the different logistics and availability of administrative information on the movement of carriers allows the sample to be focused directly on the carriers themselves. For the rail, air and port borders, in fact, a complete list of departures and arrivals, from or to international destinations, is available thanks to the cooperation provided by Trenitalia, the Italian company managing the rail network, and the management company of airports and ports. For rail crossings and ports, the stratification variable is the vector (train) used, while for airports stratification is done on individual flight destinations or groups of similar destinations and, in the case of the airports of Rome Fiumicino and Milan Malpensa, even by day of week and time slot (morning, afternoon, and evening).

7.58. *Border Operations.* The following are the procedures for conducting the counting operation and the interviews, specific to each type of border. Within the various types of borders there may be further minor differences caused by logistical conditions.

7.59. *Roads.* The general logic provides for the implementation of counts and interviews in both directions (to and from Italy). The counts are made at the border point, using the technique of systematic sampling of vehicles within the predetermined time slots. The type of vehicle, the number of passengers on board, and the nationality of the plate are recorded (the latter is used as a proxy of the residence of the travellers). For the purposes of the interview, it is necessary that vehicles be able to stop to allow the approach of the interviewers. Along borders with countries acceding to the Schengen agreements most of the interviews are conducted with the aid of the police. The latter, after having stopped vehicles at the border to carry out the control operations, ask potential respondents for interviews on a voluntary basis. The remaining interviews, for which there is no police support, are conducted at the gas service stations closest to the border points. The support of police, introduced since 2004, has improved the representativeness of the sample at Schengen borders. In the past, conducting the interviews exclusively at gas service stations resulted in under-representation of travellers that did not stay overnight or who had short-term stays abroad.

7.60. *Railways.* The survey is conducted on board international trains. An exhaustive count of all passengers along the route between two stations located before and after the border is carried out in order to determine the actual number of travellers crossing the border and to adequately expand the sample. A counting operation, on a systematic basis (one each “n”), collects information on the sex and country of residence of the passenger, the class of carriage, and, to avoid the inclusion of those who do not cross the border, the stations of embarkation and disembarkation. Passengers “in target” (i.e. arriving Italian residents and departing non residents) are then asked for the complete interview.

7.61. *Airports.* Data collection at airports is of fundamental importance, as air travellers make the highest share of total Travel expenditure. The logistics of airports requested a

differentiation of procedures (interviews and counts) between departures and arrivals. In addition, for arrivals, a different technique is used at small airports from that used at large ones. A database of all incoming and outgoing international flights is used to determine the time slots in which to sample the flights. Counts of international departures are carried out at the gate area, starting from the moment passengers begin boarding the selected flight.

7.62. The interviewer records the following information: destination of the flight, type of flight (scheduled or charter) and the total number of passengers on board (information normally supplied by airline staff at the gates); in addition, the interviewer collects information about sex and country of residence of the travellers, and whether he/she is in transit. The counting operations are conducted using the technique of systematic sampling, in order to ensure random selection. The interviews of departing foreign travellers are also conducted in the airport departure lounges and may also be conducted with passengers not subject to counting operations.

7.63. For arrivals, airports are distinguished between “small airports” and the “large airports” of Milan Malpensa and Rome Fiumicino. Traffic conditions in small airports generally allow targeting counting operations to a specific incoming flight. The survey staff charged with count operations is positioned near the passenger disembarkation area and collects: the total number of passengers that landed (by counting or by using administrative sources at the airport), the sex and residence of the traveller and if he/she is in transit.

7.64. At large airports, the physical structure and the traffic conditions do not allow targeting survey operations to individual flights. For this reason, the survey staff charged with count operations is positioned at an appropriate point in the arrivals area where all arriving travellers have necessarily to pass. Information on sex, residence and transit of the passenger is collected, as well as origin of the flight. Interviews with arriving Italian travellers are conducted in the baggage claim area in both small and large airports.

7.65. *Ports.* Also the particular logistics of port borders imply a different method of survey implementation between departures and arrivals. As disembarkation procedures of port arrivals are often "chaotic" and cause considerable survey difficulties, the counting operations are only carried out at departures. In relation to selected departures of international ships, a full count of the vehicles in the embarkation zone is made; then the driver of the vehicle selected for surveying is asked to indicate the number of persons on board the vehicle and the country of residence. At the same time, a systematic sample is made of the boarding pedestrians, who are asked if they are travelling with a vehicle, and, if travelling without a vehicle, their country of residence. Italian residents, with or without a vehicle, are asked the number of nights they will spend abroad. This information is used to estimate the distribution of Italian travellers returning to Italy, given the aforementioned absence of counting at arrivals. The total number of passengers and vehicles on board is usually provided by port authorities or by the shipping company; in the absence of this information, a manual count is carried out. The interviews, unlike the counts, are conducted at both departure and arrivals.

7.66. *Expansion of the sample data to the reference universe.* Despite the range of different survey models used, the grossing-up of sample data adopts the same logic for each type of border, implying:

- i. The identification of attributes that define the basic “ponderation cells” (an example of a ponderation cell is “travellers from Germany, leaving from the Rome Fiumicino airport”).
- ii. The estimation of traffic volumes for each ponderation cell.
- iii. The determination of the characteristics of ponderation cells, in particular the number of passengers “in target” (i.e., arriving Italian residents and departing non residents).
- iv. The expansion of variables collected through interviews (e.g. expenditure and night stays) in relation to each ponderation cell, based on the number of passengers “in target”.
- v. The application of a further expansion coefficient to the data thus obtained in order to account for the border crossing points not sampled.

7.67. Specific correction factors are then applied in view of particular logistic conditions specific to each border crossing. The procedure indicated above is integrated, when possible, with the use of official data from administrative sources.

7.68. *Roads.* For each road border crossing, ponderation cells are given by the crossing of the attributes "direction of traffic" (Italy or abroad), day of week (weekday, holiday) and time slot (day, night). The counts allow for estimating the overall volume of traffic. Thanks to the information collected through counting operations, the total volume can be broken down by nationality, so that a coefficient of expansion specific for each nationality can be applied to the interview variables, thus ensuring a correct representation of the different origins of foreigners crossing road borders.

7.69. To take account of the border crossing points not sampled, clusters of border points were defined according to “size” and geographical location. A correction coefficient is then applied to data for each crossing, given by the ratio between the volume of traffic in the cluster (both border points sampled and not sampled) and the volume of traffic in the border points sampled, both based on historical ISTAT data on passengers at border crossings.

7.70. For border points for which interviews are carried out at gas service stations a further weighting of the interviews is performed, in order to align the ratio between overnight and same-day visitors with the one observed on road crossings where the support of police is available. For periods before the introduction of police support (2004), data had been corrected on the basis of pre-Schengen series.]

7.71. *Railways.* For each rail crossing, ponderation cells are determined by the single attribute "traffic direction" (Italy or abroad). At a first stage, the counts allow for the determination of the number and the characteristics (in particular the country of residence) of the passengers crossing the border for each train. At a second stage of the process, the use of data from Trenitalia – which provides information about the ratio between the number of passenger on sampled and non-sampled trains - allow to determine an overall estimate of traffic volumes for each ponderation cell. Also in this case, for each ponderation cell, a coefficient of expansion by nationality is applied, to ensure a fair representation of the different countries of origin of foreigners. A combination of sources (historical ISTAT data,

Trenitalia information and past results of the border survey itself on previously included border points) is used to account for the share of rail border points that are not sampled.

7.72. *Airports.* For each airport, the ponderation cells are determined by the crossing of the "direction of traffic" (Italy or abroad), and the macro area of origin / destination of the flight. At the first stage of processing, the number and the characteristics of the passengers landed / and boarded for each flight are determined using the survey counts. At the second stage, counts of total traffic are adjusted thanks to the use of official data from the airport authorities. For the airports for which detailed official data are not available, an estimate is made based on the number of flights handled by the airport by macro-area of origin / destination. The values thus obtained, per each ponderation cell, represent the "reference universe" used to expand the interview data. To take into account airports that are not in the sample, the latest ENAC data are used to determine the relationship between total international air traffic and the traffic covered by the sample. In the overall processing procedure, the airports of Milan Malpensa and Rome Fiumicino are an exception in two ways:

- i. The inability to determine the number of arrivals of passengers on each individual arriving flight prevents the possibility of a two-stage processing, whereby for each cell weight the counts are directly projected on traffic data provided by the airport management company.
- ii. The strong presence of resident travellers in these airport hubs coming from abroad and in transit to other national airports, which requires the adoption of special counting operation procedures at the gates of national flights.

7.73. *Ports.* At each port, the ponderation cells are represented by the intersection of the attributes "traffic direction" (Italy and abroad), and country of origin / destination of the ship. The criterion for the processing of data on departures is analogous to that used for airports; in this case, data provided by the port management company is also used, or in the absence of such data, the "supply" (number of departing international ships) of each port is used as the basis for producing an estimate. In the case of arrivals, the estimated flows of Italians is determined based on the information collected at the time of departure about the number of nights planned abroad, thereby assuming that the return trip is made on the same means of transport. Finally, to take into account the traffic of international ports that are not sampled, historical ISTAT data on the movement of passengers at border crossings are used.

E.4. Country experience: Netherlands - Household Surveys – outbound business travel

7.74. The CBS of Netherlands has purchased a new survey on business travel and extended the list of purposes of the trip, which could be (somehow) related to modes of supply. The Continuous Business Travel survey (CBS) is a web-based survey for outbound business travel using the TNS-NIPO-base which consists of more than 150.000 people and it held every second year whereas one measurement (retrospective) every quarter in the respective year is executed. The CBS is measuring business trips (overnight stays), same day trips and number of travelers.

7.75. The sample consists of Dutch residents aged 18 years and older, identified as working population and who did at least one business trip abroad in the period of review. Every quarter of a year 10.000 panel members from the TNS-Nipo-base receive a screening

question to determine if they belong to the sample. Out of them 1.000 Dutch residents receive electronically a complete questionnaire (to be returned within two weeks). The survey is a computer assisted web interview. Travel item is grossed up to the stratification remarks of the traveler going abroad (gender, age, region, municipality and education) to the total of the Dutch working population.

7.76. The Netherlands recommends extending the questionnaire regarding the purpose of the trip which can be related to modes of supply. Type of activity, produced abroad and divided into 15 possible types (see box 7.2) are measured as well indications about the nature of employment differentiated into three categories: self-employed, employee, civil servant. Additionally, the survey contains variables on the professional group e.g. farmer, higher professional educated, owner of an enterprise etc. Therefore, specific groups of travelers could be analyzed.

Box 7.2

Netherlands household survey question on outbound business travel

Q34 | Intro abroad

Between 1 October and 31 December 2012, did you make one or more business trips abroad for your work?

We are interested in both one-day business trips abroad and those lasting more than one day. If the trip lasted more than one month without interruption, this is no longer deemed a business trip.

We consider a trip made for one of the following reasons to be a business trip (the list is not exhaustive):

- meetings;
- marketing and sales (sales, recruitment, signing of contracts, marketing and promotion);
- installation and repairs;
- military assignments;
- research, teaching, consultancy;
- cultural, artistic, religious and sporting activities;
- visits to suppliers;
- visits to clients;
- visits to head office, branches, etc.;
- conferences, trade fairs, seminars;
- training;
- incentives (trips paid for by the employer for motivational purposes);
- company excursions.

7.77. Questions 34 and 47 refer to business travelers (persons which are selected for the sample should have made at least one business trip during the reference period). As shown in box 7.3, question 47 is intended to obtain descriptive information about the business trip abroad.

Box 7.3

Netherlands household survey question on description of business trip abroad

Q47 | Description of business trip abroad

How would you describe your < Q35 > business trip abroad to < Q38 >?

- 1 meeting
- 2 marketing and sales (sales, recruitment, signing of contracts, marketing and promotion)
- 3 installation or repair activities
- 4 military assignment
- 5 research, teaching, consultancy
- 6 cultural, artistic, religious or sporting activity
- 7 visit to suppliers
- 8 visit to clients
- 9 visit to head office, branches, etc.
- 10 conference, trade fair, seminar
- 11 training
- 12 incentive (trip paid for by the employer for motivational purposes/as a reward)
- 13 company excursion
- 14 other (please specify)...
- 15 don't know

7.78. CBS Netherlands expanded the questionnaire to categories which are relevant for mode 4 persons including the categories e.g. visit to suppliers, visit to customers. Therefore, the group of business travelers providing services abroad can be narrowed down in the sample. Also persons travelling abroad to provide a. maintenance and repair services b. research and education, c. visiting a head office/daughter company are investigated through the continuous business travel survey. This information could give first indications on the number of persons and could be linked to the value of service in the respective service category.

7.79. Business travel monitor include questions about the purpose of travel and how far mode 4 persons are engaged in providing services exports in terms of mode 4. Additionally, the continuous business survey obtains information on the profession of the traveler and the main activity of the business of the traveller, whereas Question 185 contains information on education services.

7.80. Summarizing: the business travel survey gives some first views about the number of persons carrying out activities abroad and also their allocation to some service categories. For analytical and trade negotiation purposes the partner country (destination country of the trip) might be interesting as well (the questionnaire contains a separate question which countries were visited during the business trip abroad - Q38). Considering confidentiality issues and the sample size mode of supply data could be presented or aggregated to broader economic or geographical categories: e.g., EU-28, other country in Europe, Asia, Africa, NAFTA, and ASEAN.

Chapter 8 International Transaction Reporting Systems

8.1. *Scope.* This chapter describes an international transactions reporting system (ITRS) and discusses advantages and disadvantages of using the ITRS as data sources of statistics of international trade in services (SITS). In this area, the IMF Balance of Payments and International Investment Position Compilation Guide discusses the ITRS in Chapter 4 as sources for the entire balance of payments statistics. The MSITS 2010 Compilers Guide keeps the consistency with the IMF Compilation Guide in terms of the concepts of ITRS but rather focuses on the use of the ITRS in compiling SITS and provides country practices for the reference of SITS compilers.

A. General description of ITRS

8.2. The ITRS is a system of collecting data of individual international settlements and/or transactions from banks, enterprises and individuals.¹⁷⁴ In most countries that maintain ITRS, the reporting is mandatory and settlement data have been collected. This is because the ITRS is often a by-product of present or past foreign exchange controls. In contrast, survey systems are based on reporting by selected entities mainly on international transactions. In countries where the ITRS was not maintained after the abolishment of foreign exchange controls, statistical surveys have become main sources for SITS and focus has already been shifted from settlement to transaction data.

8.3. The ITRS can be classified by types of reporters. They can be resident banks, which report indirectly to the authority (the central bank in most cases) on behalf of transactors (enterprises or individuals), and/or transactors themselves, which report to the authority directly. In the following discussion, the ITRS reported indirectly is termed a bank ITRS, while the ITRS reported directly from transactors is called direct reporting system.

8.4. With respect to the coverage of the ITRS, the most comprehensive ITRS collects data on: (1) settlements with non-residents through resident banks, (2) settlements with non-residents through non-resident banks, (3) settlements with non-residents through intercompany accounts and (4) transactions without cash settlements.¹⁷⁵

8.5. Historically, the ITRS started with settlement reports by resident banks in most countries. When all international settlements were made through resident banks, they were able to report all international settlements made between residents and non-residents. However, after resident transactors started using non-resident banks for international settlements, reporting from transactors, i.e., not through resident banks, became necessary to maintain the completeness of data collection (this form of reporting is called partial direct reporting). In addition, requests of resident banks to reduce reporting burdens have made data collection depend more on reporting from transactors.

8.6. The ITRS could cover a wider range of financial operations than reporting from transactors, including currency exchanges in foreign exchange companies and banks' accompanying bank settlements. In some countries, reports of stock and position data are also based on the legal framework of the ITRS, partly because its mandatory characteristics is convenient for obliging holders of foreign assets and liabilities to report such data.

¹⁷⁴ See also BPM6 Compilation Guide, paragraph 4.2.

¹⁷⁵ Ibid., paragraph 4.3.

B. Use of ITRS for compiling SITS

8.7. The advantage of using an ITRS in compiling STIS is that the ITRS data are collected exhaustively on a timely and frequent manner.¹⁷⁶ Under the ITRS, data can be reported as soon as international settlements are done. Thus, the information is generally available on a monthly basis. The reported amounts are evidenced by the amount of settlements. Thus, the accuracy of data is ensured, at least when there is no reporting threshold or it is very small. Also, transaction codes, i.e., codes that correspond to purposes of settlements, in the ITRS should generally facilitate the classification in conformity with the recommendations of the MSITS, except in some unique cases (such as FISIM and construction) and detailed EBOPS 2010 classifications, as discussed below.¹⁷⁷ Indeed, classification of international settlements according to the type of transaction, along with precautions against misclassification, is the most important condition for the ITRS to be used in compiling statistics of international trade in services.

8.8. It is important to note that restructuring the ITRS to correspond to reporting needs may be costly and may require a period of more intense contact with respondents to inform and train them on the reporting forms, reporting procedures, and coding system, etc. However, once implemented, the ITRS can be maintained with relatively light burdens of reporting and processing data. Although in the bank ITRS the burdens are concentrated on reporting banks, the procedures of reporting are relatively mechanical once the ITRS is implemented, and there is a room for improving the efficiency by computerising data reporting work, for example. Burdens of data compilation are light because its procedure is also mechanical and compilers do not have to depend on complex statistical techniques that are often used for grossing up survey results. In addition, differently from surveys, compilers do not have to look for respondents each time. New entrants can easily be covered if they have significant transactions. This makes data reporting more comprehensive and stable and reduces compilers' burdens significantly.

8.9. Data from the ITRS are useful in compiling SITS, in particular, manufacturing services, repairs and maintenance, charges for the use of intellectual property n.i.e., telecommunications, computer and information services, other business services, personal, and cultural and recreational services, among 12 BPM6 main services components. The ITRS is also useful for insurance and financial services but it does not provide sufficient information for FISIM, whose amounts are often estimated based on accounting figures of financial corporations, as discussed in Chapter 14. ITRS captures construction services but it has certain limitations, as discussed in paragraph 8.18.

8.10. The ITRS can be used partially for transport and travel, since the compensation for services are often included in goods and other services, and thus, it is difficult to identify corresponding international settlements. The ITRS is not necessarily the best sources for government goods and services n.i.e., especially if government's international settlements do not go through private banks. Administrative data may rather provide useful information of government services.

8.11. Beyond resident-nonresident transactions, the ITRS may not be suited for the development of SITS by Mode of supply. In particular, services provided in Mode 3 (Commercial presence) do not accompany international bank settlements immediately, and

¹⁷⁶ BPM6 Compilation Guide, paragraph 4.69.

¹⁷⁷ See paragraphs 8.9, 8.14 and 8.15 for further discussion.

thus they cannot be captured statistically under the ITRS. In addition, it is often difficult to identify types of services in Mode 1 and 4, as well as partner countries in such service transactions, by the ITRS, although those transactions may be reflected in transfer of funds or exchanges of foreign currency with a certain time lag.

8.12. MSITS recommends that service transactions with related and unrelated parties are separately compiled and that each EBOPS components be allocated either to one dominant mode, or whether there is no single dominant mode, the most significant mode of supply (MSITS 2010 paragraph 3.56). It is difficult to compile such reports by using only the ITRS.

8.13. Some major caveats of which compilers should be aware when using ITRS for compiling STIS follow below.

8.14. First, under the ITRS where reporting is entirely made by resident banks, they may find it difficult to classify each transaction and report by relevant transaction codes, especially for cases where transactions are complicated and the classification is difficult. If the information on the purpose of international settlements is not transmitted correctly from transactors to reporting banks or they do not understand the classification methods properly, misclassification may occur.

8.15. Classification become more difficult when transaction codes become detailed by incorporating EBOPS 2010. In compiling SITS, MSITS recommends that EBOPS-level data and the supplementary items be produced on an annual basis (MSITS 2010 paragraph 3.51). Under the ITRS, annual data can be compiled by accumulating the data of individual transactions. Banks may find it difficult to classify individual transactions by EBOPS 2010 in the ITRS due to the number of codes to be used.

8.16. Secondly, transaction partner may be different from counterparties of settlements. The ITRS generally includes country codes of counterparties of international settlements. Such information is necessary for incorporating the country breakdown in SITS. In some cases, however, the country of the settlements counterparty and the country of transaction counterparty differ from each other. This occurs when settlement vehicles are used by transacting enterprises, for example. Ideally, statistics compilers should ask banks to report the nationality of transactions but banks may find it difficult to obtain such information.

8.17. Thirdly, the ITRS reports may not reflect the reality when transactions and settlements do not match with each other.¹⁷⁸ Under the ITRS, the time of settlements is the only choice as a time of recording, given that banks or financial department of transacting enterprises do not have information on the time of transactions. Compilers who use an ITRS consider settlement data to closely approximate data on the time when services were rendered. However, there are cases where settlements are deferred or advanced for some reasons (e.g., in construction services and insurance services).

8.18. As regarding construction, as also noted in Chapter 6, section C (i), the use of ITRS may give rise to several biases. First, it may prove difficult to correctly identify the relevant settlements, given the rather complex criteria for residence attribution set by the manuals (i.e. a site office may be regarded as a resident of the economy in which a short-term construction work is undertaken, even if this is not the case). Second, difficulties may arise in collecting

¹⁷⁸ Also see chapter 11 *Comparing Data Sources* for a more in-depth discussion of the pros and cons of using the ITRS as a data source for selected service categories.

data with the required level of detail (e.g. for the separate identification of goods and services used as an input or the distinction between short and long-term projects). Third, the ITRS thresholds set in some countries may be too high to properly cover some of the payments related to construction projects (especially in the case of fractionated settlements). Fourth, the partner country allocation may suffer the typical biases of ITRS (as it usually records the country of settlement, which may differ from the counterpart country of the transaction).

8.19. Also, netting contracts can make the settlements amounts smaller than transaction amounts. Netting is a common practice for MNEs using treasury centres. Ideally, reporting under the ITRS should be made based on the data on a gross basis, i.e., before netting. In that case, enterprises ITRS (direct reporting) is more appropriate compared to banks ITRS indirect reporting.

8.20. In some countries, the authorities oblige ITRS reporters to use foreign exchange rates fixed by the government, rather than prevailing market foreign exchange rates. If large discrepancies exist between fixed rates and market rates, due to fluctuations of market rates and/or the time lag between transactions and settlements, reported data do not reflect the economic reality of international trade in services.

8.21. If transaction data, rather than settlement data, are reported on a gross basis using the prevailing market exchange rates, most of technical limitations of the ITRS could be overcome. Although the timeliness of data reporting might be sacrificed to some extent, such an evolution of the ITRS could be beneficial for the improvement of the accuracy and completeness of reported data.

Table 8.1

Pros and cons of ITRS

Advantages	Limitations
<ul style="list-style-type: none"> - Timely and short periodicity of data compilation - Comprehensiveness (new entrants can easily be covered) - Limited number and stability of respondents (banks can report on behalf of their clients) - Burdens of reporting and compiling data is not heavy once it is implemented 	<ul style="list-style-type: none"> - Difficult to manage with an increased number of transactions - Growing share of inter-company transactions with netting practices - Transactions proxied by settlements - Possible misclassifications of services items (it would be the case with EBOPS 2010) - Geographical allocation may be biased (country of settlements versus country of transactions) - Use of thresholds (simplification or exemption) with effects on data accuracy (see Chapter 8 C)

C. Thresholds and their problems and solutions

8.22. The banks ITRS generally has reporting thresholds with a view to reducing reporting burdens. The threshold can be either an exemption threshold where there is no report under the threshold or a simplification threshold where there is an amount reported as a lump sum without any indication about the nature of the transactions. The amount of the thresholds tends to augment as the regulations related to foreign exchange controls are gradually lifted. For example, in EU countries, since the reporting threshold was raised from EUR 12 500 to EUR 50 000, a considerable loss of information has been observed. Thus, small value services transactions may not be captured due to the existence of reporting thresholds.

Typically, small value transactions of telecommunications, computer and information services as well as personal, cultural and recreational services, which are mainly made by individuals, are not captured under the banks ITRS.

8.23. Ideally, comprehensive surveys should be conducted with pilot banks to identify the magnitude of settlements below thresholds and to obtain sources for estimating their amount on a regular basis. If this is not feasible, statistical methods¹⁷⁹ can be used to estimate the amount of settlements under thresholds or other data sources need to be explored.

8.24. Regarding small value transactions made by individuals, e.g., for telecommunications, computer and information services as well as personal, cultural and recreational services, credit cards are often used for the settlements, rather than international bank settlements. Thus, it is useful, especially for debit data, to ask credit cards companies to submit detailed data on their international settlements. Although credit card companies might not classify their settlements in conformity with the BPM6 main services components or EBOPS 2010, industry codes of their counterparties could be used as indications of types of international transactions.

D. ITRS records for use in establishing business frames

8.25. The bank settlements information included in the ITRS are an extremely useful tool in not only updating the business register, but also in identifying the major players involved in international trade in services because the reports not only include settlement amounts, but also the name of transactors.¹⁸⁰ A balance of payments enterprise register can be established by accumulating such information, which can be used when conducting periodical surveys to measure small value transactions or adopting survey systems in place of the ITRS (see the chapter 5 on business registers and surveys frames).

8.26. The enterprise register needs to be updated. Some enterprises needed to be dropped (as they do not have the type of transactions being measured), while others may need to be added. Importantly, the international payments database would need to include at least once a year the lump sum of the amount of transactions in services conducted by individual enterprises. In some countries, the framework of ITRS is maintained even after the introduction of surveys so as to capture international settlements with large amounts.

E. Country experiences

E.1. Country experience: South Africa

8.27. The Research Department of the SARB, which is officially responsible for the compilation and dissemination of quarterly balance-of-payments statistics, relies heavily on information obtained via an ITRS, as managed by the Financial Surveillance Department, to complement the computation of international trade in services.

8.28. During 1999, the Exchange Control Department (nowadays known as the Financial Surveillance Department) of the SARB identified the need to collect a more comprehensive

¹⁷⁹ Information on transactions below the threshold may be available from data collected before the threshold was raised.

¹⁸⁰ This point is especially important for countries changing their collection system from banks ITRS to direct reporting and surveys.

set of data from Authorised Dealers in foreign exchange (banks) and Authorised Dealers with Limited Authority (bureaux de changes), collectively known as the Reporting Entities. The decision to move away from a system which manually captured transactions to purchase and sell foreign currency to the electronic reporting of a more expanded set of information came at a point in time that South Africa announced the gradual liberalisation of exchange controls, and aimed to assist balance-of-payments compilers in collecting information on cross border transactions. International experience has shown that with the liberalisation of exchange controls, a reporting and compliance vacuum could potentially be created if existing systems were not aligned to serve as a complementary source of information for balance of payments purposes.

8.29. After extensive international research, the Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT) was found to be the most suitable international standard of a paperless process of reporting balance of payments transactions. EDIFACT, as an Electronic Data Interchange Standard (EDI), has the advantage that data are extracted from the source systems (the accounting systems) of Reporting Entities thereby eliminating the manual and dual capturing of transactions while at the same time speeding up the reporting process to the Central Bank. Hence, the EDIFACT standard (incorporating the balance of payments Customer Transaction Report Message [BOPCUS] standard) was adopted. During 2001, the electronic Cross Border Foreign Exchange Transaction Reporting System (ITRS) was introduced, replacing the previous paper driven system, as a compulsory reporting system to be used by all Reporting Entities based on the EDIFACT international standard. The Reporting Entities report, by means of BOPCUS, in Xtensible Mark-up Language format (XML), all details of payments made to foreign parties by South African residents as well as payments received by South African residents from foreign parties, irrespective of the value. The ITRS was further enhanced when a more simplified BOPCUS version 2 was launched during 2004 to accommodate additional reporting requirements of mainly balance-of-payments compilers.

8.30. With the introduction and subsequent enhancement of the Reporting System, the SARB achieved the following objectives:

- i. a world class cost effective reporting system providing accurate (same source) and up to date information which is validated via the SARB Data Exchange Architecture (SARBDEX);
- ii. comprehensive detail of each and every transaction such as the names, surnames, addresses, ID numbers, company registration numbers, telephone numbers, physical addresses of transactors etc;
- iii. the timely receipt of information - value date plus two days;
- iv. reliable and stable twenty four hour submission time where all files are logged and acknowledged;
- v. guaranteed confidentiality by using Internet encryption, SARBDEX sends validation and SWIFTNET;
- vi. the elimination of time-consuming verification and balancing of transaction records against separate returns by using an automated Balancing Module;

- vii. the virtual elimination of paper in the system; and
- viii. legislation to enforce the reporting process.

8.31. In an ever changing environment, the need arose to further enhance the technical specifications of the system for implementation by the end of 2013. Concomitantly, the opportunity was also identified to better align the data requirements to the new Balance of Payments and International Investment Position Manual (BPM6). Gauged from the mentioned technicalities and system specifications of the ITRS, Authorised Dealers had to make an additional costly investment in this regard.

8.32. Although the enhanced ITRS was developed to assist the compilation of balance-of-payments statistics in general, it is envisaged that information applicable to trade in services might yield a comparatively larger advantage from a data sourcing point of view for the following reasons. Firstly, unlike imports and exports of goods, trade in services might have a more volatile and irregular frequency implying that the landscape of entities in this environment are prone to change much faster. For instance, a certain *homogeneous* service might be exported today, but in the ensuing two years it could be directed towards the domestic market just to be followed again by an export. Hence, the ITRS, given that there is no threshold of the transaction value, provides an almost perfect platform to keep abreast with the potential players in this field, for example, by *inter alia* the creation of mini sample surveys to gain a better understanding of specific transactions in international trade in services. Secondly, since an entity might be an importer of a *heterogeneous* package of services on a more regular basis, the same arguments utilised in the first point would be applicable. Thirdly, and probably the most important, information may be sourced with a very short time delay.

8.33. Mindful of the well-known, but sometimes stereotyped acknowledged disadvantages of an ITRS, (for instance, wrong classifications etc.), it is accepted that this source should be seen as a complementary approach to other methods of information sourcing. However, taking into account the nature of trade in services (as alluded to above), the ITRS is seen as a primary tool to obtain statistical information in more than one respect. This objective can only be satisfied when it is ensured that the reporting is accurately done in terms of the documented rules contained in the Exchange Control Rulings, Business and Technical Specifications document and the Operations Manual for which regular onsite and offsite inspections are conducted by staff of the Financial Surveillance Department. In addition, certification of the systems at Reporting Entities is also conducted annually to ensure compliance.

8.34. In conclusion, South Africa envisages making increasingly use of the ITRS in the area of trade in services in the future as the system is well adapted to provide valuable assistance in this regard.

E.2. Country experience: Japan

8.35. The core reporting system for compiling trade in services in Japan is ITRS, which is collected under Foreign Exchange and Foreign Trade Act, pursuant to relevant ministerial ordinance. Under Japan's ITRS, all residents who made payments to or received payments

from non-residents under a certain condition¹⁸¹ are obliged to report their underlying transactions. Resident transactors must report their cross border transactions to the Minister of Finance through the Bank of Japan (BOJ). Besides transactions settled through resident banking system, transactions for which payments have been made outside resident banks are also required to be reported.

8.36. The reporting form for Japan's ITRS is called "Report on Payments and Receipts (hereafter, Payments Report), which are stipulated as a part of the ministerial ordinance. Payments Report for transaction settled through resident banking system is submitted through the banks or MTOs (reporting form is shown as Annex 1), and Payments Report for transaction settled outside resident banking system is submitted directly to BOJ (reporting form is shown as Annex 2). Information reported through both reports include information on transactor, counterparty information, the date when payment was made, type of payment (payment or receipt), currency used in the transaction, value of the transaction, and the classification and description of the purpose of the transaction.

8.37. Reporters use Balance of Payments classification code (BOP code) to report their purpose of transaction. List of BOP codes is also stipulated in the ministerial ordinance. Among 186 codes in total, which are categorized by types of transactions according to BOP components, 61 codes are used for trade in service transactions. Types of transactions are identified by the first digit of the code.

Box 8.1

Sample of BOP classification codes for trade in service¹⁸² on Japan's ITRS

Transport service: 211 –	Insurance: 311 –	Other service: 411 –
211 Sea freight transport	311 Cargo insurance premiums	411 Telecommunications services
212 Air freight transport	312 Cargo insurance claims	421 Construction services
213 Passenger fare on sea transport	313 Non-life insurance premiums	431 Fees for financial service
214 Passenger fare on air transport	314 Non-life insurance claims	432 Fees for issuance and offering of securities
215 Sale/purchase of fuels, provisions, and other goods at ports	315 Premiums on life insurance and annuity	441 Computer services
216 Rental or charter of vessels	316 Life insurance claims and annuities	442 Information services
217 Rental or charter of aircrafts	317 Reinsurance premiums	451 Charges for the use of intellectual property
218 Expenses related to sea transport	318 Reinsurance claims	452 Fees for copy rights
219 Expenses related to air transport	319 Fees for auxiliary insurance services	...

8.38. Under Japan's ITRS, transactions that do not involve cash payments are required to report on gross settlement basis. Examples for noncash transactions include offsetting or netting arrangements. If resident imported and exported service under offsetting or netting arrangements, not only the amount settled, but underlying transactions on gross basis must be reported.

8.39. For instance, if a resident enterprise imported and simultaneously exported services, and only a net value was paid after offsetting its claim and liability, both the net amount and balanced out amount on gross basis must be reported.

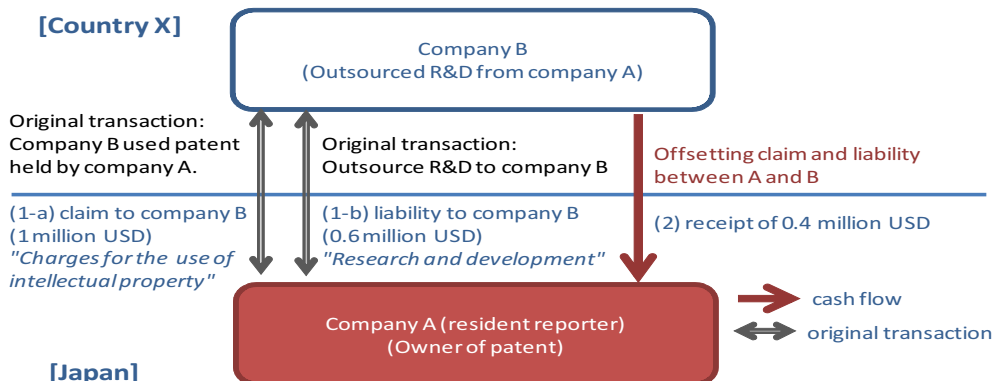
¹⁸¹ There are some exemptions from reporting requirement, including transactions below the reporting threshold (current reporting threshold is 30 million JPY or the equivalent in foreign currency per transaction, in principle) and payments/receipts related to export/import of goods which crossed Japan's custom. Other exemptions are also specified in the ministerial ordinance.

¹⁸² BOP codes are available in Japanese only. BOP codes shown here are tentative translations.

Box 8.2

Example of a noncash transaction involving offsetting or netting arrangements in Japan's ITRS

- (1) Company A has a liability of 0.6 million USD for R&D expenses.
Company A also has a claim of 1 million USD to company B for use of patent.
- (2) Company A and B offset their claim and liability.
Company A received 0.4 million USD from company B for settlement.



When company A received 0.6 million USD for the settlement of claim and liability, company A report the following transactions;

(1-a) Receipt of 0.6 million USD for "charges for the use of intellectual property" from company B

(1-b) Payment of 0.6 million USD for "research and development" to company B
Both are report by "Payment and receipts made outside banks and MTOs"

(2) Receipt of 0.4 million USD for "charges for the use of intellectual property" from company B
Report by "Payment and receipts made through banks and MTOs"

-- Total amount reported as (1-a) and (2) equals to total amount of " changes for the use of intellectual property"

8.40. Another example for noncash transactions is payment financed by loan from third party. When payment for import of service is made by third party and repaid after a certain period, payment of original transaction and increase in loan should be reported.

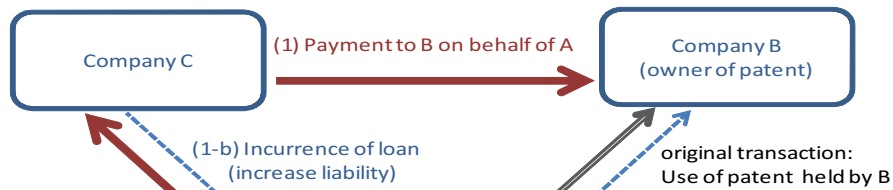
8.41. For instance, when resident enterprise imported service and the payment was temporarily financed by other non-resident company, import of service and increase in loan should be reported. Repayment of loan shall be reported when repaid.

Box 8.3

Example of a noncash transaction involving a payment financed by a loan from a third party in Japan's ITRS

- (1) Company C made a payment to company B on behalf of company A.
 - Original transaction for the payment is use of patent held by company B.
- (2) Company A repaid to company C in the following month.

[Country X]



(2) Repayment of loan
(decrease in liability)

[Japan]



When company C made the payment, company A report the following transactions;
 (1-a) Payment for "charges for the use of intellectual property" to company B
 (1-b) Incurrence of loan from company C
Both are report by "Payment and receipts made outside banks and MTOs"

When company A repaid to company C, company A report the following transaction;
 (2) repayment of loan to company C
Report by "Payment and receipts made through banks and MTOs"

Box 8.4

Report on payments for transactions settled through resident banking system ^{183,184}
in Japan

Annexed form 3	Report pursuant to Ministerial Ordinance concerning Reports of Foreign Exchange Transactions Under the auspices of: Ministry of Finance		
Report on payments and receipts (Payments and receipts passing through resident banks and fund transfer business operators)			
Payment/receipt (circle the applicable number) 1. Payment 2. Receipt		Reporting date:	
To: The Finance Minister (via the Bank of Japan)		Date of transaction:	
1 Reporter <resident> Name of reporter and the name of representative: Address: Name and the telephone number of the contact person:			
2 Counterparty <nonresident> (in the case of outward investment in securities, counterparty will be the issuer of the securities) Name: (15 ~ 17) Country or region: Counterparty's industry classification code (required only if the transaction is applicable to note 2) :			
3 Value of the transaction, currency of denomination (report in the original currency) (18 ~ 29)			
Explanatory notes on reporting annexed form 3. 1. The "2 Counterparty <non-resident>" column shall be based on an original contract. In case of outward investment in securities, mentioning shall be an issuer of the security. If it is not possible to figure out the counterparty of original contract, you may enter a counterparty of the payments and receipts you have made. 2 "Industry classification code" shall be based on the code defined in the Annexed form No.3 of the Ordinance concerning Reports of Foreign Exchange Transactions. - Reporter's industry classification code is required only when the purpose of payments and receipt correspond to the following BOP codes; 512, 521, 531, 541, 568, 813, 817, 823, 911, 912, 915, 920 - Counterparty's industry classification code is required only when the purpose of payments and receipt correspond to the following BOP codes; 512, 521, 531, 541, 568, 811, 812, 815, 820, 913, 917, 923 - If the transaction is purchase or sell of outstanding stocks relevant to BOP code 912, report the industry classification code of the issuer of the stocks instead of reporter's industry classification code. 3. For the case of payments to overseas account for temporary deposits (for less than ten days), which is used for the settlement of claims and liabilities, reporters shall report the original transactions in this form Payments and withdrawals of deposits in overseas account are exempted to report. Notes: 1) Payment and receipts related to import and export of goods are exempt from reporting requirements. 2) If end of the month position of overseas deposit excess 100 million JPY or equivalent, "report on amount outstanding of deposits overseas" is further required to report.	4 Balance of Payments code* * Fill in the relevant code as defined in the Annexed form No.1 of the Ordinance concerning Reports of Foreign Exchange Transactions. If there are 2 or more items, enter each amount with (). (30 ~ 32)	5 Reporter's sector (33) (circle the applicable number) 1. Banks 2. Other financial institutions 3. General Government 4. Central Bank 5. Other sector Reporter's industry classification code required only if the purpose of the transaction for "5. Other sector" is applicable to note 2 (34 ~ 36) []	
BANK OF JAPAN USE ONLY			
Country code (37 ~ 39)	Currency code (40 ~ 42)		
FOR BANKS AND FUND TRANSFER BUSINESS OPERATOR USE			
Bank or company identification number (43 ~ 47)			
Branch			

¹⁸³ Report on payments and receipts is available in Japanese only. Reporting form shown here is a tentative translation, and only the original Japanese reporting form has legal effect.

¹⁸⁴ Reporters are allowed to report monthly aggregated transaction by obtaining the permission of Minister of Finance. In such case, reporters must use different reporting forms (monthly aggregated reporting forms) for both transactions settled through resident banking system and outside resident banking system.

Box 8.5

Report on payments for transactions settled outside resident banking system¹⁸⁵ in Japan

Annexed form 1

Report pursuant to Ministerial Ordinance concerning Reports of Foreign Exchange Transactions
Under the auspices of: Ministry of Finance

Report on payments and receipts

(Payments and receipts not passing through resident banks and fund transfer business operators)

Reporting date: _____

To: The Finance Minister
(via the Bank of Japan)

	Date of transaction
1 Reporter <resident> Name of reporter and the name of representative: _____ Address: _____ Authorized official's signature or seal: _____ Name and the telephone number of the contact person: _____	Reporter's sector (14) (circle the applicable number) 1. Banks 2. Other financial institutions 3. General Government 4. Central Bank 5. Other sector Reporter's industry classification code (required only if the purpose of the transactions of "5. Other sector" are applicable to note 2) [] (15 - 17)

2 Counterparty <nonresident> (in the case of outward investment in securities, counterparty will be the issuer of the securities)

Name: _____ (18 - 20)

Country or region: _____

Counterparty's industry classification code (required only if the purpose of transactions are applicable to note 2)

Purpose of the payments and receipts	Payment/receipt	Value of the transaction, currency of denomination (report in the original currency)	Bank of Japan use only (currency code)
(21 - 23)	(24)	(25 - 36)	(37 - 39)
Balance of Payments code:	Payment		
Description:	Receipt	(40)	(41 - 52)
(56 - 58)	(59)	(60 - 71)	(72 - 74)
Balance of Payments code:	Payment		
Description:	Receipt	(75)	(76 - 87)
(91 - 93)	(94)	(95 - 106)	(107 - 109)
Balance of Payments code:	Payment		
Description:	Receipt	(110)	(111 - 122)
(126 - 128)	(129)	(130 - 141)	(142 - 144)
Balance of Payments code:	Payment		
Description:	Receipt	(145)	(146 - 157)

BANK OF JAPAN USE ONLY (country code)
(161 - 163)

Explanatory notes on reporting annexed form 1.

- 1 The "Authorized official's signature or seal" column shall be completed by an authorized person.
- 2 "Industry classification code" shall be based on the code defined in the Annexed form No.3 of the Ordinance concerning Reports of Foreign Exchange Transactions.
 - Reporter's industry classification code is required only when the purpose of payments and receipt correspond to the following BOP codes; 512, 521, 531, 541, 568, 813, 817, 823, 911, 912, 915, 920
 - Counterparty's industry classification code is required only when the purpose of payments and receipt correspond to the following BOP codes; 512, 521, 531, 541, 568, 811, 812, 815, 820, 913, 917, 923
- 3 The "2 Counterparty <non-resident>" column shall be based on an original contract. In case of outward investment in securities, mentioning shall be an issuer of the security. If it is not possible to figure out the counterparty of original contract, you may enter a counterparty of the payments and receipts you have made.
- 4 In the "Purpose of the payments or receipts" column, fill in the purpose and relevant BOP code as defined in the Annexed form No.1 of the Ordinance concerning Reports of Foreign Exchange Transactions. If the transaction is purchase or sell of outstanding stocks relevant to BOP code 912, the name and the industry classification code of the issuer of the stocks are also required to report in in the same column.
- 5 Use additional copied sheets and report as consecutive pages as necessary.
- 6 Offsetting of claims, netting and clearing arrangements (including paid in kind) are also required to be reported on gross basis. In this case, you may report gross value of original claims and liabilities with this form by indicating relevant BOP code, and report the amount of settlement actually paid or received with annexed form 3 or 4 by using BOP code "491 (the amount of the offset)".

Notes

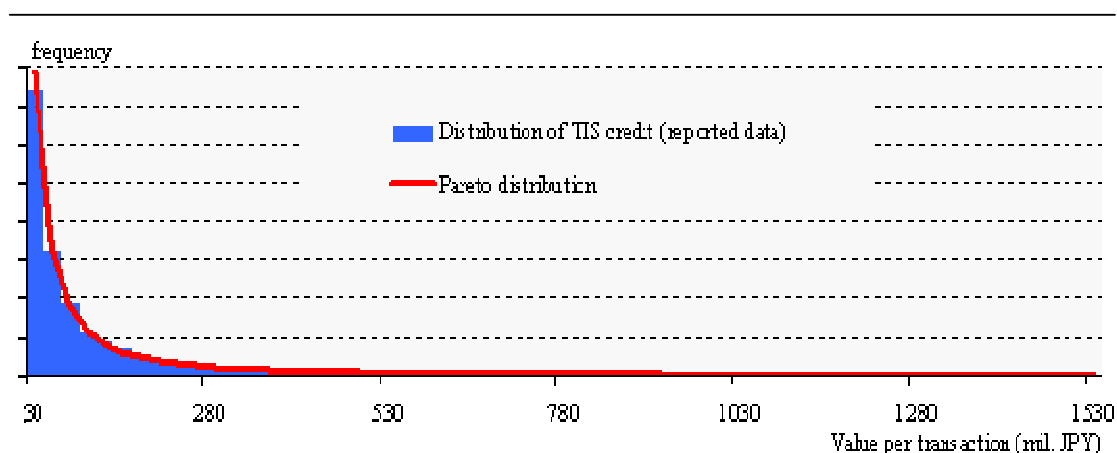
- 1) Payment and receipts related to import and export of goods are exempt from reporting requirements.
- 2) You are required to report "Report on amount outstanding of deposits overseas" if the value of overseas deposit excess 100 million JPY or equivalent at the end of the month.

¹⁸⁵ Report on payments and receipts is available in Japanese only. Reporting form shown here is a tentative translation, and only the original Japanese reporting form has legal effect.

8.42. *Estimating transactions under reporting threshold.* As described previously, ITRS have been used as the main data collection system for Japan's BOP, as Japan's ITRS cover cross border transactions comprehensively. Meanwhile, along with number of deregulations, their reporting threshold has been lifted to high level (30 million JPY). Therefore, considerable amount of transactions may have been missing under Japan's ITRS, especially in items that small-lot transactions are dominant, such as majority of services.

8.43. To estimate trade in service (other than transport and travel¹⁸⁶) below the threshold, Japan will employ statistical methods in implementing BPM6. Empirical researches suggest that the frequency of transactions increases exponentially as a value of transaction decreases (figure 8.1). Statistically, Pareto distribution fits well to the data.

Figure 8.1
Histogram of international trade in services in Japan



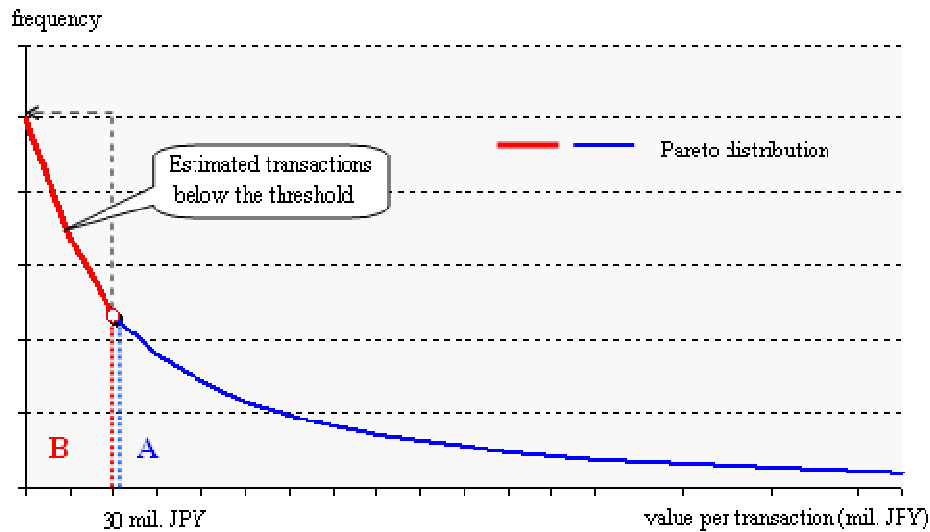
8.44. Assuming that transactions below the threshold also follow Pareto distribution, data below the threshold can be estimated as follows.

8.45. The parameter of Pareto distribution is determined by the reported transactions. Based on the parameter, probability that a transaction take a value below the threshold (probability B) and probability that a transaction take a value above the threshold (probability A) are estimated. The number of transactions below the threshold can be derived by multiplying the number of reported transactions by ratio of probability B to probability A.

8.46. Average value for transaction below the threshold is also derived from the Pareto distribution. By multiplying the average value by the number of transactions, the total value of transactions below the threshold (the value of B in figure 8.2) can be estimated. These estimations are made on annual basis, for each service item.

¹⁸⁶ Transport is captured mainly by direct reports. Travel is estimated by using boarder survey, household survey, and official statistics.

Figure 8.2
Estimation of transactions under the threshold in Japan



8.47. Total value of trade in service will be estimated by using ratio estimation. The ratio estimator is derived by dividing the total value of transactions below the threshold by the total value of transactions above the threshold (estimated value of B/total value of A). By multiplying the ratio estimator by reported transactions, missing value of trade in service can be captured.

8.48. One probable method to estimate transactions below the threshold is to use information transactions before the thresholds was raised. Compared with such method, Japan's approach has an advantage in that a ratio can be updated periodically with recent data; thus, structural changes and price changes caused with the passage of time can be captured. Further, distribution fitting will be assessed on a frequent basis, thus the statisticians are able to choose other statistical approach when the implemented method does not fit well.

E.3. Country experience: France: from bank ITRS to direct reporting

8.49. France used ITRS as data source for International Trade in Services Statistics up to 2010. Under the French ITRS, banks reported all payments between residents and non-residents registered in their books, whether the transaction was on their own account or on the account of their clients.

8.50. Since 1990, the data from Bank reporting was complemented by direct reporting by firms with annual cross-border transactions greater than EUR 30 million. This system still exists, and covers approximately 500 firms. These firms are required to report all transactions (on a monthly basis) and positions (on a quarterly basis) with non-residents conducted through accounts with domestic banks or banks abroad or through intercompany accounts.

8.51. The French ITRS had several advantages. It delivered information in a very timely and frequent manner, since data were registered at the moment of settlement of the transactions. Moreover, as the French ITRS derived from an exchange control regime, it was originally designed for surveillance and was thus highly detailed, allowing in principle for an

almost exhaustive knowledge of international services transactions. Finally, compiler's data access was facilitated and cost-efficient because data processing and compilation occurred at Banque de France DG Statistics, and Banque de France is also the institution overseeing payment systems and operations of resident banks in payment systems.

8.52. However ITRS also displayed serious limitations. One of the overriding issues was the management of misclassification. This stems from the fact that the largest part of transactions is classified by intermediaries (banks) on behalf of their clients. This creates a loss of information because the latter have greater knowledge of their transactions and are likely to convey the most accurate information regarding foreign counterparties and level of detail. Experience in France also demonstrated that this classification represents a heavy burden for banks. Potential remedies like implementing an efficient data quality management including for instance automatic classifications, or like increasing the reporting threshold, would involve either additional resource (e.g., dedicated team to deal with the output of automatic classification procedures) or increase the risk of substantial data omission.

8.53. A second limitation of ITRS is the way in which transactions are registered. These are on cash basis, while the balance of payments methodology (see BPM 6) recommends the accrual basis of recording. In addition, the experience of ITRS in France also showed that ITRS did not capture all transactions that did not have a payment counterpart, such as intra-group transactions. Similarly, ITRS is unable to register transactions when the corresponding settlement is made from a non-resident bank account. As the evolving patterns in international trade show increased settlements through non-resident bank accounts and in intra-group flows, these limitations become progressively prominent.

8.54. Thirdly, the French ITRS data displayed a distinct asymmetry between receipts and expenditures : data were much more precise on the debit side than on the credit side because, for the latter, reporting banks could only record funds coming from a non-resident bank, but could not know the origin of this movement.

8.55. Finally, ITRS is an example of an administrative source of which the primary goal is not to compile trade statistics. This means that it is also vulnerable to changes imposed for other motives, but that may have negative consequences for collecting and producing statistics. For example, in Europe, the creation of the Single European Payments Area (SEPA) that aims to improve the smoothness of cross-border payments and to lower their cost, implies that banks' reporting obligations are adjusted and reporting thresholds are increased (up to 50.000 EUR as of 2008).

8.56. In order to assess the magnitude of the ITRS limitations, Banque de France has organized a parallel run between the "old" ITRS-based system and the new ECEIS system, in order to perform all the appropriate testing on the ECEIS survey (see Chapter 6 F (i)). The results indicated that the ITRS system could be replaced by a direct reporting system.

8.57. It should however be noted that some traces of the old system are kept in the new gathering system: the ITRS still provides data from all transactions higher than EUR 50 000 that intermediaries complete for their clients vis-à-vis counterparties located outside the SEPA. This survey is particularly useful to identify firms that have to be integrated into the direct reporting system.

Chapter 9 Administrative Records

9.1. *Scope.* This Chapter describes administrative records which can be used to obtain information relevant for the compilation of statistics on resident/non-resident transactions in services, FATS and movements of natural persons under modes 2 and 4. In particular, the chapter indicates advantages and shortcomings of these sources and describes good practices in their use. The Chapter consists of the following sections: General description of administrative records (Section A), Customs records for use in freight and insurance services (Section B), Immigration information and entry/departure records (Section C), Tax records (Section D).

A. General description of administrative records

9.2. Administrative records are compiled for regulatory purposes or to support and document the administration of various government programmes, such as immigration regulation, social security benefits, education, and health. Administrative records considered in this chapter as potential sources of data for SITS include: customs records, records of immigration authorities, and records of tax authorities.

9.3. The use of administrative data has become a cornerstone of economic statistics programmes in many countries.¹⁸⁷ The use of administrative data, especially as complementary data sources for compilation of SITS, has increased considerably to the point where they now play a major role in the production of sub-annual and annual statistics and are a reliable source for updating business frame registers.

9.4. Administrative records may be accessible in administrative databases and are valuable sources of information. However, other sources with similar information should also be considered for use in the statistical system. For example, in the cases of public enterprises and public quasi-corporations, reports to government such as income statements may be a basic source of information about the production and financial status of these entities. Statistical offices may be also able to obtain access to such type of data from the private sector.

9.5. In some cases statistical outputs are produced at the national level from information obtained from different administrations and/or systems. The characteristics of each source are important, as are the differences between the sources and how these differences can flow through to output statistics; e.g., different regional offices of the same agency may experience different changes to their budget, capacity and workload, and this may influence how fast and carefully they can register and process their cases.

9.6. It is important, therefore, to understand and document those aspects of the source which are critical to the design of the system and which ensure coherency by helping users understand quality and limitations. This includes information likely to be extracted for statistical analysis, and how this is registered and stored, as well as features of the environment in which the administrative system exists and which can influence quality.

9.7. *Access to administrative records and institutional arrangements.* Ideally, access to the administrative sources should be guaranteed by legislation. Legislation is not a sufficient condition for the productive use of administrative records. A co-operative approach to the

¹⁸⁷ See Guidelines on IES, paragraph 5.98.

development and utilisation of administrative records for statistical purposes is likely to be far more effective in obtaining access to administrative records than an approach involving legal arguments. Managers in organisations gathering administrative information must be sensitive to the importance of the data and contribution to the overall statistical system.

9.8. With the increasing role of administrative data in the overall statistical system, clear arrangements between statistical offices and administrative authorities must be in place and reviewed regularly to ensure continuity of the use of these important data sources in the statistical system. The agreements should contain clauses about confidentiality, coding, data transfers and their frequency and the content of the administrative database. Strict measures should be taken within the statistical agencies to ensure the administrative data records remain confidential, are treated as survey micro data and used only for statistical purposes. Access to micro records should only be given to staff involved in survey-taking activities.

A.1. Advantages and limitations of administrative data

9.9. If administered and maintained properly, administrative records can offer strategic and statistically important advantages over direct collection of corresponding data from respondents. However, the following advantages and limitation of administrative data must be considered, including the following:

i. *Methodological soundness.* As administrative recording complies with legal and other administrative concepts and requirements, the resulting records often adhere to defined standards of methodological soundness and consistency in terminology. While the use of administrative records for statistical purposes normally need to be transformed to better approximate statistical concepts, when the adequate transformation procedures are developed and systematically applied, administrative records can be a reliable and valuable source of statistical information (see paragraphs 9.9 – 9.11 below);

ii. *Cost.* Administrative records are a relatively inexpensive source of information compared to surveys and censuses, an important factor for statistical agencies faced with tightening budgets. However, the cost to statistical agencies could increase if the administrative data require complex transformation and/or processing to better meet the statistical requirements;

iii. *Coverage.* Due to their normative nature, administrative records have the advantage of covering a large segment of the economy, if not the entire economy. Moreover, due to the administrative character of the data, non-response is normally negligible and data are subject to substantial scrutiny, which should make them accurate. However, statistical compilers should be aware that the coverage and content of administrative records can be subject to discontinuities resulting from changes in regulations or administrative practices. Also, variables in administrative records may not all receive the same level of attention at the administrative source; for example, revenues may be examined closely, but less effort may be devoted to ensure that the industry codes are correct. Nonetheless, with the increasing demand to produce statistics for small areas where sample surveys may be difficult to implement, administrative records represent a useful alternative or complement to such sample surveys, when the limitations above are considered and addressed.

iv. *Periodicity and timeliness.* The availability and timeliness of administrative records may not align well with data release deadlines of statistical agencies. For example, individuals and/or entities may not be required to report to administrative agencies at common intervals, resulting in some data being reported monthly, while others are reported quarterly or annually. Moreover, annual data may be presented in administrative records on a calendar year basis or on a fiscal year basis. There may also be delays before the administrative data can be used and procedures established for allocating the records to the proper period;

v. *Response burden.* Administrative records allow for the reduction of the burden of statistical inquiries. Administrative records can be adapted and compared against data collected by other methods, e.g. surveys, for validation purposes. Linking administrative records to other administrative data sets or survey data/censuses is increasingly being performed to produce richer datasets for statistical utilization.

vi. *Data compilation.* Administrative records can be used to complement survey data and in the absence of information, such as non-response, administrative data can be useful in the imputation process.

9.10. *Mapping of concepts and definitions of administrative sources with statistical uses.* In order to make administrative records useful to statisticians, it is necessary to build mappings showing how the concepts, definitions and classifications of administrative data can approximate the economic variables required by the statistical system. For example, chart of accounts or mappings should be established between the business accounting type data reported to administrative authorities and economic variables of the statistical agencies. Methodologies should be developed on how the administrative data can be used as extrapolators for economic data collected from official surveys and censuses using economic accounting concepts and definitions.

9.11. Mapping, for example, is needed between the legal entities used by administrative authorities and the enterprises and establishments used by statistical agencies. Consequently, one of the prerequisites in using administrative data is to establish rigorous mappings between the various structures of entities maintained by administrative departments and the statistical agencies. This mapping is necessary to ensure that there is no duplication in coverage and that it will be possible to match up information from various sources. In countries where a unique identifier is used by all administrative authorities to identify a firm, the use of a unique identifier will greatly facilitate the integration of the administrative records into the statistical system.

9.12. When designing the system for use of administrative records, the file to be used for statistics should be separate from the system in which the administrative records and transactions are stored for operational use. This separation enables the data to be manipulated and aggregates formed and statistical tests applied without interfering with the administrative processes. It also helps to maintain the integrity and consistency of the data.

B. Customs records for use in freight and insurance services

9.13. Customs records are one example how administrative sources can be used by SITS compilers. In general, customs declarations include the freight charges and insurance for shipments of merchandise at the border.

B.1. Country experience: Philippines

9.14. Compilation of trade statistics for the Philippines is heavily based on administrative documents coming from the Bureau of Customs (BOC). Hard copies of Export Declaration and Import Entry Internal Revenue Declaration (IEIRD) are collected at all ports of BOC. Aside from hard copies, electronic files coming from automated system of BOC is being provided on a monthly basis. This electronic file including attachments of invoices and other related materials and reports coming from traders were being used to validate and augment monthly trade statistics.

9.15. *Special survey.* In 2007, a special survey on imported commodities was conducted by NSO in collaboration with the Institute of Developing Economies (IDE), Japan. The objective of the survey was to collect data on imported commodities from the country of origin and their disposition to the economy including the cost of insurance and freight on each commodity. The results of the survey was used as inputs to the compilation of the 2005 Asian Input-Output Table and to verify the collected insurance and freight values generated from administrative documents for sample establishments (traders). (See Annex 1 for the 2007 Survey on Selected Imported Commodities (SSIC) questionnaire on the UNSD website).

9.16. *Other sources.* Freight and insurance costs are also validated from the data collected from various government and private entities. The following are the agencies where information on freight and insurance costs is collected: Insurance Commission, Bureau of Shippers, Asian Terminal Incorporated, Cargo house, Fedex-Philippines.

9.17. *Computation/Estimation: imports, insurance costs.* These are costs of insurance taken to cover the cargo. It can either be local or foreign insurance. Local insurance means that the cost is paid by the shipper or importer while foreign insurance will be borne by the supplier of imported goods. This is dependent on the Terms of Delivery (TOD) stated in the customs declaration. For Import Entry Internal Revenue Declaration (IEIRD), the insurance cost is stated in the customs declaration in the attached invoice.

9.18. If insurance value is not declared, the following steps are done in computing for the insurance value. If No value of insurance is stated and there is no attached invoice then the value of insurance value is estimated as = Free on Board (FOB) value * 0.01. For multi-item entry, the individual insurance is computed as follows: $I_i = X_i$ times (Total Insurance Cost / Total FOB), where I_i is the insurance cost of the *ith* item, X_i is the FOB value of the *ith* item and *i* range from 1 to *n*.

Box 9.1

Country example from Philippines on computation/estimation of insurance costs using customs records

Example:

Given: Total FOB value = 45,000
Total Insurance = 900
 X_5 = 500

Find: Insurance cost of the 5th commodity

Solution: $I_5 = X_5$ times (Total Insurance/Total FOB) = 500 x (900 / 45,000) = 10

9.19. Thus, individual insurance cost is prorated using Total Insurance/Total FOB as a multiplier and the individual FOB value as a basis on computation.

9.20. *Freight Cost* refers to the charges paid for the transport of the cargo. It can either be prepaid or collect. Prepaid freight means that the freight is shouldered by the exporter while collect means that the freight is payable at the country of destination. This is dependent on the Terms of Delivery declared for the various terms of delivery code, determining whether freight cost is prepaid or post-paid by the importer.

9.21. For IEIRD, the freight cost is stated in the customs declaration or in the attached invoice. If freight value is not declared then it is estimated as = FOB value * 0.10. In the case of self-propelled goods which entered Philippines under their own power (aircrafts, yachts, tankers, boats etc.) The freight cost is equal to zero (0).

9.22. For multi-item entry, the individual freight cost is computed by prorating using the Total Freight Cost / Total Gross Kilo as a multiplier and the individual gross as the basis of computation. (Individual Freight) $Fr_i = (\text{Gross Kilos}) Gk_i \text{ times } (\text{Total Freight/Total Gross Kilo})$; where Fr_i is the freight cost of the *i*th item, Gk_i is the gross kilo of the *i*th item, and *i* is from 1 to n.

9.23. If the freight cost is not stated separately and added to total cost of the goods declared, freight cost is prorated using Total Freight/Total FOB as a multiplier and the individual FOB value as a basis on computation.

9.24. *Computation/Estimation: exports, insurance and freight cost.* For Export Declarations, insurance and freight cost are not stated nor reported in any boxes in the export document. Report on this is usually taken from invoices attached with the ED. If so, copy the insurance and freight value declared in the attachment. For multiple commodities, freight and insurance cost is computed by prorating using Total Insurance/Total FOB or Total Freight/Total FOB as multiplier and the individual FOB value as basis in the computation. Insurance and freight costs are not imputed if not reported in the document.

C. Immigration information and entry/departure records

9.25. In most countries, immigration records and entry/departure cards (E/D cards) are a valuable source of information on the movement of persons across borders, even as the increasing mobility of persons and facilitation of the free movement of persons across borders, in some parts of the world or under certain circumstances (e.g. in the case of the European Schengen area) is changing this picture.

9.26. Migration statistics are designed to measure the number of persons crossing a country's frontier; these statistics usually distinguish between short-term visitors and migrants. Data on the number and characteristics of migrants and short-term visitors are usually obtainable from international migration statistics, guidelines for which may be found in *Recommendations on Statistics on International Migration, Revision 1* (1998).¹⁸⁸

9.27. A short-term visitor is normally defined as person staying, or intending to stay, in a country other the one in which the person is normally a resident for less than 12 months. Short-term visitors include individuals travelling; border, seasonal, and other short-term

¹⁸⁸ Available at: <https://unstats.un.org/unsd/pubs/gesgrid.asp?ID=116>.

workers; and nomads. Migrants are persons moving permanently or for periods of 12 months or longer; the persons do not need to be resident, for 12 months before being classified as residents (exceptions to the 12-month rule are made for students and medical patients who may be in an economy for longer than 12 months and not change residency if they intend to return to their home economy at the completion of their studies / treatment). The intention of doing so at the time of entry into the jurisdiction is usually sufficient. A short-term migrant is a person who moves to a country other than that of his or her usual residence for a period of at least three months but less than a year (12 months), except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends or relatives, business, medical treatment or religious pilgrimage. Migration statistics should not include movements of military personnel or civilian government employees and their dependents living abroad because they are considered residents of their home countries.

9.28. Both short-term visitors and migrants are of interest for SITS. For short-term visitors, the objective is to measure earnings and expenditure of resident short-term visitors abroad and non-resident short-term visitors in host countries. For balance of payments purposes, migrants are regarded as having changed residence. Migrants are of interest because they are likely to continue supply services under mode 4.

9.29. It should be highlighted that existing administrative procedures were put in place for purposes other than to measure trade in services. Records and information out of these administrative procedures should therefore be carefully evaluated to understand the degree to which they could be useful. This exercise might even lead to adapt the administrative records for improved consideration of relevant phenomenon, i.e. measurement of tourism or trade in services. Such adaptations are more likely if it can be demonstrated that they lead to improvements in the procedures used for registration and/or improved possibilities for monitoring work being done and managing the responsible agency.

9.30. *Immigration records* contain information provided by travellers when applying for visa as well as passport information recorded at the time of border crossing. *Entry/departure records (E/D cards)* contain information provided by traveller to immigration authorities when crossing country border. The information available from these two sources and reconciled by the immigration authorities are often the basic source for establishing the flows of inbound and outbound visitors. The E/D cards usually collect information¹⁸⁹ on a census basis on name, sex, age, nationality, current address, date of arrival (of departure in the departure card), purpose of trip, main destination visited and length of stay (expected on arrival and actual on departure for inbound visitors; expected on departure and actual on arrival for outbound visitors).

9.31. In 2005 UNWTO carried out the study “Tourism as an International Traded Services” in which 26 out of the 34 responding countries (in a sample of 48 countries considered to be representative of a wider group of countries) responded that they were using E/D cards¹⁹⁰. This study showed that E/D cards are the most common mechanism for estimating arrivals; 21 out of 34 countries revealed that they combined this with other administrative records (controls on the entry by non-residents, using passports, visas, etc.). The study found that border surveys (which allow measuring visitors’ expenditure) are increasingly used. The same study found that the combination of sources (E/D cards, border surveys, other

¹⁸⁹ See the UNWTO publication *Tourism as an international trade service (2005)*, page 40 on the results of survey of country practices in the use of E/D cards, available at: <http://www.unwto.org/statistics/border.pdf>.

¹⁹⁰ See *International Recommendations for Tourism Statistics 2008*, paragraphs 3.41-3.43.

administrative procedures) occurs mostly where the measurement of visitor flows is associated with that of their expenditure. Border surveys supplement E/D cards and often use as a universe the information from E/D cards or administrative sources concerned with passenger traffic.

9.32. Usually, immigration authorities provide data based on arrivals, in which case, for inbound travellers, the data that are collected refer to the expected length of stay. Some countries reconcile entry and exit cards by matching their identification number in order to establish the actual length of stay. Some difficulties might arise in this operation owing to the existence of unmatched cards as a consequence of errors in the process (lost cards, errors in the capture of the data), lack of coordination in recording authorizations of change in status, or change in expected stays (illegal immigrants who entered as tourists being also a possible source of discrepancy). However, notwithstanding the existing challenges and limitations the compilers should make most use of them for BOP,¹⁹¹ and consequently, for SITS compilation.

9.33. *Main use of immigration records and E/D cards.* These sources of data, together with data on patterns of expenditure and compensation of employees, could form the basis for a data model to estimate travel services of multiplying [the actual number of trips of short-term travellers] by the estimate of per capita expenditure from surveys of actual expenditure. Preliminary estimates for a period can make use of data on the expected length of stay and anticipated expenditure.

9.34. Immigration records and E/D cards can be an important source of information on mode 2 movements of persons as such persons may constitute a large proportion of those recorded by such records and E/D cards. However, E/D cards are not seen as a sufficient source for mode 4 movement of people, as E/D cards are meant to collect data for immigration control purposes, not identification of natural persons crossing the border to supply a service. Mode 4 types of movements only represent a very small proportion of total entries/ departures as registered by E/D cards. Moreover, the identification of mode 4 persons is not an issue for compilation of tourism statistics, as such persons are part of the visitor population, regardless of the fact they are travelling in order to provide a service.

9.35. The use of E/D cards requires that SITS compilers have a clear understanding of their coverage and content, most importantly:

- i. *The geographic coverage of E/D data* needs to be clearly stated. This implies that the following questions can be answered: Which border crossing points and what types of border crossing are covered by border control operations? Does this control apply to air passengers only, or does it also cover other types of arrival (by sea, by land, by river, etc.)? The clarity of regarding the geographical coverage is particularly relevant for countries with long and open international land borders or borders delimited by rivers, where geography makes crossing the border easy or where border controls are absent at some crossings. Border control authorities usually will have an estimate of what is beyond their present control procedures, but this estimation might need to be permanently monitored to detect changes over time.
- ii. *What categories of persons are covered?* Are there specific conditions that exclude some persons from border controls, in addition to those represented by the

¹⁹¹ BPM6 Compilation Guide, paragraph 3.222.

non-controlled crossing points? What is the situation for nomads, refugees, border workers, etc. In many countries, nationals are often exempted from border controls or detailed reporting requirements (and from completing an E/D card where such cards exist, even if they reside abroad). Frequent border crossers may have special permits, may not be registered for each crossing, may be excluded from the controls altogether, or may be covered only by a global estimate. Finally, certain types of border crossing might be subject to less cumbersome procedures (for instance private airports, or land borders used by nationals of neighbouring countries).

iii. *What is the actual content of the data?* The access to detailed micro-data in order to make possible debugging, correction of invalid codes, in addition the variables available and their value sets should be ensured. In general, countries should not expect border control operations to provide all the information needed to measure traveller and visitor flows, and to include all the required variables and the type of distinctions that would be needed for description and analysis. This is an important issue and must to be further analyzed, as some countries are sometimes satisfied with the mere existence of such a source and proceed to its use without looking into whether it adequately captures all the necessary specific information needed to measure mode 2 and 4, and consider whether quality is acceptable. A recurring example is that of many E/D cards that do not request the residence of the respondent, only the nationality. In the best of cases, the data provided will be sufficient to define the framework for a border survey covering characteristics of interest. Additionally, not all controls in a given country will be the same at all border points; nor will the questions asked (questions at land borders, for instance, might be kept to a basic minimum, because of the time constraint).

iv. *Quality of the data collected* has to be assessed. There are various repeated inconsistencies in the information taken from administrative sources that stem from the latter's specific functions. The main interest of border control authorities, for instance, is controlling the flows of non-nationals; and as a consequence other data are of less direct interest to them and are not always well collected or stored (e.g., a national's country of residence, origin or destination— often different from the origin or destination of e.g. the flight—, detailed purpose of trip). Their concern is that the declared purpose be consistent with the type of visitor's visa or resident permit presented. This may induce travellers to declare a purpose in line with their visa, e.g. recreation instead of convention/conference, or seeking business opportunities. Revisions, checks and controls are needed to make E/D card information usable for purposes other than migration.

9.36. In order to improve this data source, UNWTO proposed a revised version of E/D card, as shown in table 9.1.

9.37. The proposed E/D card developed by UNWTO takes into account the necessary variables for the measurement of travellers' flows useful for tourism statistics as well as for modes 2 and 4. Trips of persons entering the country might be observed at the same time for mode 2 and for mode 4: mode 2 has to do with the personal expenses, whereas mode 4 has to do with their purpose for entering the country and the mode of remuneration (by a non-resident in order to perform a specific task in the country of reference if an employee of a foreign firm). If a further differentiation of the business purpose is recorded on the E/D card, e.g. intra-corporate transferee or employment by a local business, then this can be used to identify mode 4 of supply.

Table 9.1

List of data items in the UNWTO proposed E/D card

Information items	Usefulness for tourism statistics
Date	Useful for cross-checking with other sources
Name	Not useful for tourism statistics
Surname	Not useful for tourism statistics
Sex	Useful
Civil status	Useful
Date of birth	Useful
Place of birth	Not particularly useful for tourism statistics
Nationality	Useful
Occupation	Useful
Current country of residence	Useful (also for stratification of the universe)
Address in visited country	Could be useful for tourism statistics along with port of entry in multiple destination countries
Passport number	Not useful for tourism statistics
Place of issue	Not useful for tourism statistics
Date of issue	Not useful for tourism statistics
Type of passport	Not useful for tourism statistics
Type of visa	Useful to identify certain categories of border crossers and to determine which are non-tourists:
Port of entry	Useful (also for stratification of universe)
Mode of transport	Useful (also for stratification of universe)
Flight number or name of ship	Useful for cross-checking with other sources (*)
Airline	Useful for cross-checking with other sources (*)
Intended length of stay	Initial indication as to actual length of stay; needs to be confirmed
Accommodation	Initial indication as to actual accommodation; needs to be confirmed
Purpose of travel	Initial indication as to actual purpose of travel (also useful for stratification of universe)

9.38. However, in countries that require a temporary work visa for mode 4, at least for citizens of some countries, administrative records from the issuing department (usually the Ministry of Immigration) may be a more reliable source of information. If there is no requirement for a specific visa (for instance for the duration of the stay or its repetition), the proposed E/D card might not always enable identifying mode 4, unless a “purpose of trip/visit” is requested. Identifying the actual purpose of a trip/visit in the case of travellers under mode 4 might not be possible using E/D cards if they are managed by immigration authorities. The declared purpose of trip may be distorted by the type of visa/permit that has been issued. In the case when business visas are used, they can be directly identified using immigration data. Moreover, it is usually recommended that E/D cards identify the different subsets of travellers (such as visitors) through indirect observation of derived characteristics.¹⁹²

9.39. Also it should be noted regarding mode 4, that the interest might not be on the total number of trips, but on the combination between number of persons, number of trips taken by these persons and duration of each trip and total per person. The above mentioned E/D card could inform on repetition of trips, only if the persons are uniquely identified in those records, and the registrations at different border crossing points are stored in the same database. This is necessary to make possible linking the different trips made by the same person.

9.40. *Working permits.* In many developed countries where migration regulations are complex, each legal foreign entrant applying for a work permit is asked to register his/her nationality, occupation, purpose and place of visit, length of staying etc. The information on inflow and stock such persons could be collected from the immigration authority, and with

¹⁹² See “Tourism as an International Traded Service” (2005) paragraph 2.45.

the help of such information it may be possible to estimate numbers of movements and presence of foreign natural persons. In some other countries, information on migrants is not sufficiently detailed for the industrial classification, and instead, registrations of work permits may be available from the immigration or labour authority. Then such data could serve as a major source to compile the number of foreign employees recruited by foreign affiliates in the service industry.

D. Tax records

9.41. *Tax related information.* Records of tax authorities can be a very important source of information on values of trade in services, foreign affiliate relationships, and the movement of natural persons. For example, tax records, especially value added tax (VAT) declarations, may include the value of services sold or purchased to or from non-residents as well as the location of the service transaction. Moreover, tax records often include information on the ownership relationship between businesses, which may be useful for compiling foreign affiliate trade statistics (FATS). Additionally, tax records on businesses may include employment information, which can be combined with individual tax return records (which identify independent service suppliers or employees of service providers who go abroad to supply a service), to compile data on the movement of natural persons.

9.42. *VAT declarations.* Where a value added tax (VAT) has been introduced, and include services, the VAT declarations belong to the potentially most promising administrative data for statistics on the value of trade in services modes 2 and 4. The information are often reported monthly, cover most business units in the economy and since the main principles of a VAT system are similar in different countries there are common features, items and even details that could be used for statistical purposes in many countries. Box 9.2 provides an example of how VAT system is used in the EU countries.

9.43. *Use of tax records for statistical business registers purposes.* Tax records are one of the sources for business registers and survey frames, as they contain unique identifiers, names, and incomes of businesses. The systematic and persistent updating and maintenance business registers based on tax records will normally lead to significant quality improvements in the business register (coverage, timeliness and accuracy), reduction of operational costs and business compliance costs.

Box 9.2

Application of the common VAT system in Czech Republic for SITS purposes

Where a value added tax (VAT) has been introduced, and include services, the VAT declarations belong to the potentially most promising administrative data for statistics on the value of trade in services modes 2 and 4. Data are often reported monthly, cover most business units in the economy and since the main principles of a VAT system are similar in different countries, and in particular for the EU/EEA member countries, there are common features, items and even details that could be used for statistical purposes in many countries.

The common system of VAT in the EU/EEA area is designed conveniently especially for the estimation of imports of services from other EU countries because of so-called reverse-charge procedure in VAT as a general rule of trade in services. According to this general rule¹ the place of supply of services is (for taxable purposes) the place where the recipient is established¹. Moreover, any legal person receiving a service became a taxable person. In other words, any legal person receiving almost any service provided by a foreign entity is supposed to be registered for VAT and declares the import of services (and relating VAT) in its VAT declarations. As a result import of services, more intricate to survey than export side, is almost wholly covered by VAT declarations (only the import of services by persons without VAT obligations are not).

VAT declarations also, at least in some countries, provide additional information on tripartite trade (with a resident as an intermediary) which is significant part of merchanting. According to the international manuals (BPM 6th, SNA 2008 and ESA 2010) merchanting is newly to be recorded as a trade in goods, however, as it used to be recorded as a service (BPM 5th, SNA 1993, ESA 1995) it is still closely related to the services (often a part of a survey of trade in services).

In addition to that, VAT declarations also provide information on transactions carried out by non-residents in domestic market of a reporting economy. According to the common system of VAT there is an obligation for any legal person to register for VAT in any member state in which they carry out transactions such as acquisition/dispatch of goods or selling/buying goods¹. Even though this is more important for compiling of general merchandise according to the change of ownership principle, it may also be a valuable data source for estimation of trade in services as neither of these issues can be compiled separately.¹

Apart from VAT declarations themselves, there is also another related administrative data source which may provide detailed information on export of services into the EU. VAT Information Exchange System (VIES) is a supplementary data system to VAT declarations relating, among other things, to reverse-charge procedure on provision of services to non-resident seated in other EU member state. The provider of services (exporter) is obliged to report detailed information on provided services, such as recipient's country according to the seat and recipient's VAT number. These data may be valuable especially for analytical purposes and may help to identify links between related companies.

VAT declarations represent the most reliable administrative data sources. In the Czech Republic they are used for statistics that are available monthly, about 50 days after the end of a month.

In the Czech Republic data from VAT declarations are exploited for various statistical purposes relating to the trade in services. First, they are used for identification and updating the population of the statistical survey on foreign trade in services (ZO 1-04). The total population consists of residential legal units selling or purchasing services to/from non-residents. The sample survey is conducted quarterly and its respondents are selected annually (for all the following four quarters) according to the combination of criteria (CZ-NACE activity, number of employees, turnover) up to 5 000 respondents. VAT declarations are usually used as an additional data source in order to identify omitted importers and exporters by these criteria. VAT declarations are also used to update of the survey sample during the year, as it contains up-to-date data.

Secondly, in the future we plan to use VAT declarations as a primary data source for grossing up the value of services (to the whole population) for trade with the EU countries. Unfortunately, the item 'trade in services with non-EU countries' is declared in the Czech VAT form along with other items not related to services and as such cannot be identified separately. Therefore the VAT declarations could not be used for grossing-up of trade with non-EU countries in the Czech Republic.

Box 9.2 continued

Apart from the purposes related directly to the trade in services, there are also issues that should be mentioned in terms of compilation of services even though they are related to items newly recorded as a part of general merchandise¹ (but used to be defined as services). Both issues results from the obligation for non-residents to register for VAT in any country of the EU they are trading in:

There are foreign merchants (non-residents) registered for VAT in the Czech Republic that are **buying and selling goods within the country without any transaction of goods moving across the borders**. By these transactions on the internal market non-residents create a margin, which is **not recorded by any other statistical data source than VAT declarations**, and as such causes a balance difference between supply and use side of any commodity traded within the country by non-residents.

For example, assume that a non-resident purchases oil from a Czech producer (resident A) for 100 and sell it to another Czech producer (resident B) for 120. Non-resident's margin is 20 (120-100). The resident A reports in a statistical survey its production of oil for 100 (supply side) and the resident B declares intermediate consumption of oil for 120 (use side). The difference between supply and use side in commodity of oil (100-120) is equal to the non-resident's margin (20). Table 1 illustrates the imbalance between resources and uses in supply and use tables if negative merchandising is not recorded. Table 2 illustrates the supply and use tables, if negative merchandising is recorded as imports of goods.

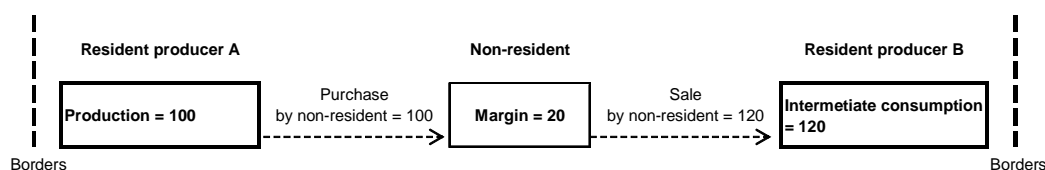


Table 1 – Supply and use tables – negative merchandising not recorded

CPA commodity	Output (P.1)	...	Import (P.7)	incl.		Re-sources	Intern. Consumption (P.2)	...	Export (P.6)	incl.		Uses	Im-balance
				goods	services					goods	services		
oil	100		0			100	120		0			120	-20
Total	100		0	0	0	100	120		0	0	0	120	-20

Table 2 – Supply and use tables – negative merchandising recorded as negative import

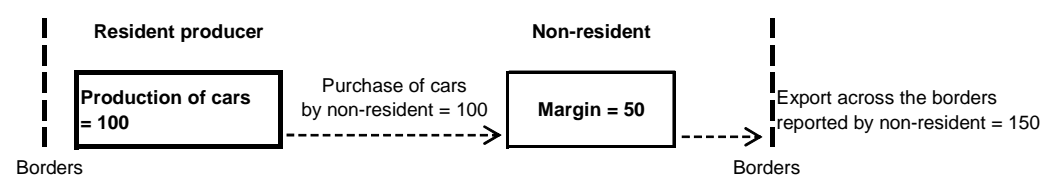
CPA commodity	Output (P.1)	...	Import (P.7)	incl.		Re-sources	Intern. Consumption (P.2)	...	Export (P.6)	incl.		Uses	Im-balance
				goods	services					goods	services		
oil	100		0			100	120		-20	-20		100	0
Total	100		0	0	0	100	120		-20	-20	0	100	0

Most of non-residents' transactions on the internal market (declared in non-residents' VAT returns) is connected with trade between related resident-producers and non-resident merchants¹ and followed by goods crossing the borders (recorded by IMTS).

The purchases and sales by non-residents on the internal market of the Czech Republic are taken into account when compiling general merchandise (following change of ownership principle). However, from the view point of the country where non-resident is seated, these transactions should be viewed as merchandising.

For example, suppose that a Czech resident producer sells cars to a non-resident parent company for 100. These cars are physically exported by non-resident and declared for 150 in the Czech foreign trade statistics. There occurred a margin of non-resident parent company of 50 (150-100). In order to obtain Czech export according to the change of ownership principle, the export of 150 declared in IMTS by non-resident is adjusted for the non-resident's margin (-50). General merchandise shows the export of cars for 100 (sales by resident to non-resident) and the margin (50) is supposed to be registered as merchandising in the non-resident's country of seat (should be included in its account of profit and loss).

Box 9.2 continued



In the Czech Republic there is only information from VAT declarations submitted in the Czech Republic available, so there is no administrative data source containing information on trade carried out abroad by residents registered for VAT in other EU countries. However, these transactions are covered by the sample survey on international trade in services in questions on merchandising.

9.44. *Experience of the Statistics New Zealand.* The Statistics New Zealand is in the process of establishing a new business register which will include micro businesses not currently recorded. The economic significance size measure however, will remain identifiable on the new Business Register (BR) for business continuity reasons.

9.45. Statistics NZ has a long history in the use of administrative data in the production of official statistics. Statistics NZ has used tax data from Inland Revenue (tax office) in the production of statistics since the 1920's, however up until the mid-1980's only the annual tax return data was used. They included incomes of individuals, self-employed workers and companies. There was no integration with other data sources, and Goods and Services Tax (GST)¹⁹³ did not come into force until 1986. From the mid-1980s Statistics New Zealand incorporated tax data with other Statistics New Zealand data. This change was made possible by Statistics New Zealand reconciling the BR with GST registered businesses on the Inland Revenue Client Registration database. As part of the reconciliation (of the BR with the Client Register information), a concordance from the BR to a business tax number has been maintained. This link from the BR enterprise statistical unit to the business tax number has been the key to the expanded use of tax data within the official statistics system.

9.46. Currently, tax data is the prime administrative data source used to maintain the BF. In terms of volumes of data used by Statistics NZ, administrative data significantly exceeds the volume of data directly collected by Statistics NZ survey activity.

9.47. The use of administrative data by Statistics NZ to maintain the BF and as a source of data for statistical outputs is supported by Central Government initiatives to reduce compliance costs on businesses. One resulting benefit includes the ability to utilise existing information collected by government organisations with an infrastructure of systems, people and processes that the statistical office could never hope to replicate. Statistics NZ however has had to address the challenges of transforming data collected for administrative purposes into data that fits with statistical model requirements. The consideration of the legal, confidentiality and privacy issues associated with administrative data are also very important for Statistics NZ to meet the requirements of the Statistics Act 1975 relating to the security and confidentiality of data used in the production of official statistics.

9.48. *MoU between IRD and Statistics NZ/* Statistics NZ's use of administrative data in the BF and other areas needs to fit with the legislative rules controlling the organisations that collect the administrative data. With the tax example in New Zealand the Inland Revenue

¹⁹³ GST - Goods and Services Tax. This is a Value-Added tax that covers almost all business activity.

Department (IRD) is responsible for the operation of the tax system. The work of IRD is largely governed by the Tax Administration Act. The Tax Administration Act gives the Commissioner of Inland Revenue the authority to supply data to Statistics NZ for statistical purposes. A MOU (memorandum of understanding) between IRD and Statistics NZ defines: (i) the relationship between IRD and Statistics NZ, including the relevant legislative requirements related to the supply and use of the tax data, (ii) the tax data supplied to Statistics NZ, (iii) the conditions under which Statistics NZ can use the tax data. A joint working committee meets quarterly to facilitate the data supply and to keep both organisations up to date with developments on the use of tax data by Statistics NZ and the collection of tax data by IRD.

9.49. Consideration of the confidentiality and privacy issues related to the use of administrative data are very important in terms of providing confidence to the wider community that the Statistics Office and the administrative data collecting organisations are complying with the law and information privacy requirements. All uses of administrative data by Statistics NZ are under the conditions of the Statistics Act 1975. As well any additional 'inherited' requirements from the organisation that originally collected the administrative data are recorded in the MOU documents noted above. It is very important to note that Statistics NZ supplies no unit record data to the organisations that supply the administrative data. It is a one way flow from the suppliers to Statistics NZ.

9.50. Some of the Statistics NZ uses of administrative data include the use of administrative unit records about individuals (e.g. employees). The use of data related to individuals in New Zealand is governed by a Privacy Act. Statistics NZ has developed specific protocols to address the requirements of this act when dealing with these data sets and related data integration projects.

9.51. Progressively over the past 20 years as the use of tax and other admin data to maintain the BR has been extended and as the result: (i) BR quality has improved. Coverage, timeliness and accuracy have all improved, (ii) BR operational costs have been reduced, and (iii) Business compliance costs resulting from BR update surveys have been reduced.

9.52. *Challenges in the use of tax records* for statistical purposes include: (i) understanding the rules and processes that define the administrative data. These rules and processes will influence the coverage, timing, quality, completeness etc of the administrative data, (ii) understanding the differences between the statistical units on the BF versus units defined in the tax system, (iii) developing appropriate methodology and processes to transform the administrative data to the statistical model. This has involved:

- i. Reliance of tax data for small businesses with a simple structure where the statistical unit directly matches the tax unit structure. Supplementing the tax data for large and complex businesses with Statistics NZ collected data.
- ii. Using models to derive the required statistical outputs from tax data. For example modelling two and six monthly GST tax returns to produce quarterly data.
- iii. Using statistical techniques such as estimation/forecasting to address timeliness issues. This is done in NZ for quarterly economic surveys when only two months of tax data are available in the required time frame.

- iv. Using tax data that is correlated to a required statistical variable (not available in the tax system) to model the required variable.
- v. Accepting the administrative data as it is and being very clear with users on defining the statistical outputs produced. Also providing overlaps between series on the old and new definitions to help users make the transition.
- vi. Requesting changes to administrative rules so that the administrative data better fits with the statistical requirements.

9.53. The BF is maintained on a continuous basis using information from a range of sources. These sources include tax data, Companies Office data, survey feedback, media reports, company reports etc. Tax data is a key source and provides the foundation of the BR. The BR holds the tax registration number for every enterprise on the BR. This link from the BR to tax data is an essential facilitator in the Statistics NZ use of administrative tax data to maintain the BF and also the use of tax data in statistical outputs.

9.54. Units on the BR are stratified into three tiers on the basis of their structure, GST activity and employment numbers. These tiers are used in the BF maintenance strategy to ensure that the person resources used to maintain the frame are focused on large businesses that dominate the economy (see table 9.2).

Table 9.2
Tiers of GST activity in New Zealand's Business Register

Tier	Description	Number of enterprises	Contribution to total GST activity
1	Large and/or complex enterprises	5,600	60%
2	Medium sized enterprises	70,000	30%
3	Small sized businesses	390,000	10%

9.55. All units are updated using tax data as described below. For tier 3 enterprises tax data is the prime source of update information and most updates are automated. For tier 1 and 2 enterprises an annual frame update survey and other information are used to supplement and confirm the tax information. Table 9.3 list main BR attributes / processes and indicated use of administrative data and provides comments.

9.56. The BR has a quality monitoring programme to understand and report on the quality being obtained from these uses of administrative data on a monthly basis. This programme also identifies opportunities for quality improvement and extending the use of administrative data.

Table 9.3

Summary of process and data used in New Zealand's business register

BR attribute / process	Use of administrative data	Comments
Adding new enterprises to the BR	Tax data is the main source for all tiers. Each month new business tax registrations that meet the BR minimum economic significant criteria are added to the BF. Standard BF classifications of industry, sector and geo-code are derived from tax registration information. Enterprise contact details (e.g. postal address etc) on the BR are populated from tax registration information.	New tier 1 and 2 enterprises are also surveyed with a Statistics NZ frame update survey questionnaire to confirm the classification information derived from tax data. Also to collect frame information not available from tax data including: -Ownership relationships -Multi-location enterprises. -Overseas ownership and financial activity indicators.
Ceasing enterprises on the BR	Tax data is a key source for all tiers. On a monthly basis enterprises on the BR are ceased if their tax system registration record is ceased or tax data indicates that the enterprises level of financial activity has moved below the BR economic significance criteria. Companies Office information on limited companies that are ceased on the company register are ceased on the BF. This is a monthly process.	
Employment size measure	Tax data is the main source for all tiers. The BR enterprise employment size measure is updated monthly for all enterprises using tax data.	
GST \$ activity size measure	Tax data is the only source. The BR enterprise GST \$ size measure is updated monthly for all enterprises using tax data.	
Contact details for existing enterprises (e.g. postal address)	For tier 3 enterprises BR contact details are updated to the latest tax record information if Statistics NZ has had no survey interaction with the unit over the past year.	All Tier 1 and a rolling sample of Tier 2 enterprises are surveyed with a frame update questionnaire to confirm and update all their BR information.
Legal name changes of limited liability companies on the BR	Companies Office information is used monthly to update the legal names of companies on the BR that register a name change with the Companies Office.	
Ownership relationships between companies.	Companies Office information is used monthly to update direct ownership percentages between two or more companies.	

Chapter 10 Other Data Sources

10.1. *Scope.* This Chapter describes data sources which can be used for SITS purposes and are not covered in Chapters 5-9. The Chapter makes evokes the concept of Big Data and encourages countries to take a forward looking position with respect to the use of other data sources for SITS purposes. The Chapter consists of the following two sections: General description of other data (Section A) and Use of other data sources (Section B).

A. General description of other data

10.2. For the purposes of this Guide, other data sources refer to the sources not covered in chapters 5-9 and include: credit card records, mobile phone records, records of business associations, financial statements of companies, reports of chambers of commerce, records of investment promotion agencies, surveys conducted by other organizations, private databases and data compiled by trading partners. Some of these sources are part of the body of information referred to as Big Data.

10.3. *Big Data.*¹⁹⁴ In our modern world, more and more data are generated on the web and produced by sensors in the ever growing number of electronic devices surrounding us. The amount of data and the frequency at which they are produced have led to the concept of Big Data. Big Data are data sources that can be –generally– described as high volume, velocity and variety of data that demand cost-effective, innovative forms of processing for enhanced insight and decision making.¹⁹⁵ Big data can be classified as follows:

- i. Administrative (arising from the administration of a program, be it governmental or not), e.g. electronic medical records, hospital visits, insurance records, bank records, food banks, etc.;
- ii. Commercial or transactional: (arising from transactions between two entities), e.g. credit card transactions, on-line transactions (including from mobile devices), etc.;
- iii. From sensors, e.g., satellite imaging, road sensors, climate sensors, etc.;
- iv. From tracking devices, e.g. tracking data from mobile telephones, GPS, etc.;
- v. Behavioural, e.g. online searches (about a product, a service or any other type of information), online page view, etc.;
- vi. Opinion; e.g., comments on social media, etc.

10.4. Big Data has big potential for official statistics. Initial evidence suggests that there are three broad areas for experimentation:

- i. Combining Big Data with official statistics.
- ii. Replacing official statistics by Big Data.

¹⁹⁴ The description of Big Data is based on the UNECE publication, “What Does “Big Data” Mean for Official Statistics,” by UNECE (2012), paragraph 6; available at: <http://www1.unece.org/stat/platform/pages/viewpage.action?pageId=77170614>.

¹⁹⁵ “What Does “Big Data” Mean for Official Statistics,” by UNECE (2012), paragraph 6.

iii. Filling new data gaps; i.e., developing new 'Big Data - based' measurements to address emerging phenomena (not known in advance or for which traditional approaches are not feasible).

10.5. However, using Big Data in official statistics faces numerous challenges, including:

- i. Legislative; i.e., with respect to the access and use of data.
- ii. Privacy; i.e., managing public trust and acceptance of data re-use and link to other sources.
- iii. Financial; i.e., potential costs of sourcing data relative to its benefits.
- iv. Management; e.g., policies and directives about the management and protection of the data.
- v. Methodological; i.e., data quality and suitability of statistical methods.
- vi. Technological; i.e., issues related to information technology.

10.6. *Big Data and SITS.* Big Data may be useful in compiling SITS, particularly travel and tourism expenditures. In particular, administrative data on electronic medical records and hospital visits may aid in compiling health services; sensor and tracking data, as well as mobile phone records, may aid in tracking international visitors and their movement and purchases; and credit card data may be useful in tracking a wide range of tourism expenditures. Credit card data may be also be useful in compiling other SITS components, if merchants are sufficiently identified as a service industry in the data. More information on such applications is included in section B of this chapter.

10.7. The SITS compilers are, therefore, encouraged to treat Big Data as a new potential data source and to undertake pilot projects in selected areas. It should be noted that seizing the potential of Big Data would require more attention to the organization of an efficient data integration process as well to data modelling, estimation and imputation. All these modifications of the SITS statistical process should be done in a transparent way, be part of the quality assurance programme and be properly reflected in SITS metadata.

Box 10.1

Project of Eurostat on using Big Data

Eurostat is conducting a feasibility study on the use of mobile positioning data for tourism statistics. A 15-month project is expected to start in January 2013. The study will explore the usefulness of using mobile positioning data for tourism statistics (and related domains) and will assess the strengths and weaknesses. Issues to be studied include access (and continuity of access), trust (of producers and users of statistics), costs, concepts (in translating the existing tourism statistics concept to a new data source) and other methodological topics (e.g. representativeness, sampling within a very large number of observations). The ability of handling large data files held by mobile operators is considered a critical obstacle to overcome if the project is to be successful. The inclusion of this project in the work programme is, among other reasons, based on promising research results in a number of countries.

B. Use of other data sources

B.1. Payment cards data

10.8. Payment and bank cards (such as credit and debit) are an important payment instrument in national and international transactions. Payments and cash withdrawals performed in the compiler country with credit or debit cards issued abroad and performed outside the compiler country with credit or debit cards issued by resident institutions represent a valuable source for the compilation of travel.

10.9. This source is recommended for countries that have a favourable institutional environment concerning payment cards, especially if there is a well-established and extended network of automated teller machines (ATM) and point-of-sales (POS) terminals, along with a massive use of payment cards in national and international transactions.

10.10. Using the information reported by payments' institutions, it is possible to obtain the number and value of operations performed in resident ATM and POS with cards issued abroad, and performed abroad with cards issued by resident entities, as well as the characteristics associated with the cards and the type of channel used. This provides, on a monthly basis, a significant measure of travel expenditure both in terms of credits and debits.

10.11. A comprehensive payment cards database can provide detailed and accurate information concerning operations performed with payment cards, with a number of variables that can be used to characterize the operations, namely related to the geographical breakdown and the types of goods and services.

10.12. In terms of the geographical breakdown of travel, payment cards data can be used as a good proxy, as it is assumed that the country where the issuer bank is located is the country of residence of the traveller. Compilers should be aware that this assumption may not be appropriate for some countries, where a considerable number of individuals use payment cards issued in other countries other than their country of residence, e.g. BENELUX.

10.13. Regarding the purpose of the trip, payment cards data can also be a helpful data source. The bank identification number (BIN code¹⁹⁶), which consists in a way of identifying if the cardholder's designated account is an individual or a company, allows to distinguish business cards from other types of cards. This can be used as a proxy to estimate expenditure made by business travellers and other travellers. However, an important issue that needs to be considered is the regular use of personal cards in business travel, which leads to the need of complementary data sources to estimate this breakdown.

10.14. A separate alternative breakdown of travel into types of goods and services is required according to BPM6 and EBOPS 2010, which can be integrated with additional requirements of other statistical domains, namely the tourism statistics and tourism satellite account. Payment cards database can provide important information to meet this new breakdown, using the activity sector of the goods and services provider. For payments made in the compiler country by cards issued abroad the NACE of the POS owner is available, while for payments made abroad by cards issued by resident institutions the merchant category code (MCC) of the POS owner is provided. These variables can be used as proxies to identify the goods and services acquired by travellers. For this purpose, correspondence

¹⁹⁶ Recently designed as IIN (Issuer Identification Number).

Box 10.2

Description of U.S. Merchant Category Codes¹

The U.S.-based payment card industry uses merchant category codes (MCCs) to classify each merchant and its credit, debit, and cash withdrawal transactions into industry groups. One or more MCCs are assigned to each U.S. or foreign merchant by the merchant's acquiring financial institution, based on the merchant's primary type of business. Each transaction is then assigned the MCC used by the merchant to process the transaction. Most members of the payment card industry collect detailed data on transactions by country and industry group, for which the industry classification is determined by the company's existing internal MCC groupings.

In total, there are approximately 600 MCCs on the universal list used by the U.S. payment card industry. Although the payment card merchant categorization was not specifically designed to conform to the BPM6 main services components, many of the MCCs directly correspond to particular services categories. However, MCCs are applied broadly in that a merchant that sells both goods and services may do so under the same MCC. If transactions data is being used to measure travel purchases, this distinction is not important, but it may be if it is intended to be used for other purposes.

tables between NACE or MCC and travel expenditures on goods and different types of services have to be developed.

10.15. The main advantages of using payment cards data as a source for the compilation of travel item are, among others, the wide-ranging coverage of travel-related transactions; the existence of a limited number of respondents; the timeliness and frequency of the information, as data is available with a short delay and on a monthly basis; the detailed information on the characteristics of both travellers and goods and services providers; and, finally, a reduced cost in terms of compilation, since payments institutions need to process this information for their own use, imposing a reduced statistical burden. However, coverage with payment cards data will likely change over time.

10.16. A sound understanding of the processes of payment card transactions and the actors involved in this process, as well as what to measure, is crucial in order to found and communicate the specification of data to collect from the payment cards institutions. Over time the specification also needs to be reviewed and eventually modified in order to reflect changes in cross-border payments infrastructures and patterns.

10.17. There are some challenges that have to be considered when using payment cards data. On the one hand, payment cards data is not comprehensive for the travel expenses, regarding the fact that there are other means of payment that must be considered. On the other hand, there is the difficulty in excluding some non-tourist related transactions, such as imports or exports of goods or services other than travel. For this purpose, the use of the transaction amount along with the economic activity of the goods and services providers can be used to exclude transactions that should be classified under other items in the balance of payments. Also, an indicator of whether the card was present at the point of sale is useful in isolating some of these transactions, particularly those related to e-commerce. Another subject that needs to be considered is the fact that classifications used by payment card processors are not necessarily equal to those used by statistical compilers. In fact, efforts should be made to obtain standardised nomenclatures, compatible with the statistical taxonomy. Also, some time lags between the moment of the payment and the time of the trip must be accounted for when using payment cards data. An additional potential difficulty is the development of the financial and payments systems that may lead to the appearance of more international brands and processors, which possibly will bring complexity to the collecting system.

10.18. Using diverse data sources is crucial to have a comprehensive system that facilitates the collection of travel-related transactions made by residents abroad and by non-residents in the compiling economy. One of the main challenges in designing a travel compilation system refers to integrating different data sources, which have different degrees of coverage, different periodicities and that can collect overlapping data. There is a trade-off between reducing the impact of possible double counting and covering as much as possible the various types of expenditures of travellers. The extensive detail of the payment cards database could allow the compiler to mitigate this risk.

B.2. Country experience: Iceland

10.19. Statistics Iceland has been using information on payment card data since 2009 for the compilation of the travel item as supplementary information to the trade in services survey. Information is received quarterly from all three payment card companies in the country, of which two issue credit cards, while all three provide acquiring services for domestic use. The coverage of this data source is therefore 100%.

10.20. Statistics Iceland has two databases for the payment card data, one on domestic usage (foreign payment cards used in Iceland) and the other on abroad usage (Icelandic payment cards used abroad). There are two databases needed because of the different variables for domestic and foreign usage. For domestic usage, the identification is the ID number of the Icelandic sales/services provider, whereas for foreign usage the identification is a merchant code category (MCC) number and the name of the foreign sales/services provider that is provided by the payment card companies. Statistics Iceland could have had the same ID for both, i.e. the MCC number, but selected to receive the ID number for the domestic usage to be able to link to the NACE classification.

10.21. *Database on domestic usage:* Includes data from three card acquirers, credit and debit cards. Incoming data is processed by connecting them to the NACE classification and from there to the EBOPS classification. For some NACE numbers, like hotels and restaurants, all transactions are automatically included in travel. For other NACE numbers, all new ID numbers are examined manually as well as those transactions that do not match the NACE classification. The majority of the data (2009-2012) relates to travel, 85-90%, while 2-4% is other services (e.g. computer services, transport services and other business services). 10-12% of the data is excluded from the database which is mainly enterprises that deliver all transactions in the services survey whether the payment is made by payment cards or not. In order to avoid double reporting, local businesses are asked not to deliver transactions in the services survey if the payment is made by payment cards.

10.22. The following variables are received on domestic usage:

- i. ID number of the sale/services provider, individual or enterprise, which receives the payment. The ID number is in the process linked to a) the business register which provides the official NACE category of enterprises (main activity)¹⁹⁷ and some individuals and the official name of the company and individuals and b) linked to the national registry for the name of the individuals which are not registered in the business register. In the process the ID numbers are linked to the trade in services category table which automatically provides categorization for most of the data.

¹⁹⁷ Through this ID the use of the business register in linking various sources is possible (see also Chapter 5).

- ii. ID name of the sale/services provider. It provides additional information on the enterprise when the NACE category is not adequate, i.e. hotel vs. restaurant, international shipping vs. domestic passenger sailing. It also sometimes provides additional information of the individual which helps to classify the transaction.
- iii. Country code, of the country where the card is issued.
- iv. Amount, received mostly in local currency.
- v. Date, month and year, of the transaction.

10.23. Nevertheless, despite the information already available by credit card data, some problems /challenges have to be noted for the domestic usage data.

- i. Large amounts are ATM withdrawals which cannot be identified. All ATM withdrawals are by assumption classified as travel. To support that assumption is the fact that the Icelandic currency is not much traded abroad, so there is no advantage of carrying the Icelandic currency back.
- ii. A wrong NACE category may occur. However, the business register has undergone major amendments so this problem should become less important (see also chapter 5 of this guide).
- iii. Individual ID numbers, where no NACE category is available and therefore the transaction cannot be classified. In some cases the ID name is useful to classify the transaction but in other cases not. All transactions that cannot be classified are classified as travel. However, those that cannot be classified are of low value as all larger transactions are examined carefully.
- iv. Data is missing or wrong, for example country code missing or wrong ID number.
- v. Double counting. If local sale/services providers also include payments made by payments cards in the services survey.
- vi. Individuals which have payment cards from foreign banks.
 - a. Credit card issued abroad to Icelandic residents should not be included but cannot be identified which causes possible over-coverage.
 - b. Foreigner from country A with payment card from country B, causes incorrect country classification.

10.24. *Database on usage of credit cards abroad.* This database includes data from two card issuers. Only credit cards are included as the cards issuers do not have detailed information on the debit cards. Statistics Iceland receives total figures for the usage of debit cards abroad, which confirms that the use of credit cards abroad is much more common than the use of debit cards abroad. The whole amount of the debit cards are classified as travel, given the information that most of the debit card transactions are ATM withdrawals.

10.25. Incoming data is processed by connecting the MCC ID number to the EBOPS classification. Some MCC numbers, like hotels and restaurants, are automatically included in

travel. For other MCC numbers, new names of sale/services providers are examined. The majority of the data relates to travel, 72-74%, while 14-15% is other services, thereof about 6% passenger transportation services by air (Icelanders purchasing fares online from foreign airline companies) and the rest is computer software bought via Internet and other business services. 10-13% of the data is excluded from the database, mostly e-commerce. The information obtained by credit card can also to some extent be used for the compilation of transportation services and other business services as supplementary information on the information of the services survey (see also Chapter 14, B (i) and (viii)).

10.26. The following variables are received for usage abroad:

- i. MCC ID number of the sale/services provider, international classification, assigned to enterprises by the credit card acquirer. In the process the numbers are linked to the trade in services category table which automatically provides categorization for most of the data.
- ii. MCC name which relates to the MCC number.
- iii. Name of the sale/services provider. Provides in many cases additional information on transaction when the MCC ID is not adequate, for example online bookstores, payment systems etc. It can be very helpful in order to determine the correct EBOPS number. In some cases it is clear that the transaction is not travel but unclear to which EBOPS classification it relates to and then the transaction is classified as other business services.
- iv. Card type, individual or enterprise card. Statistics Iceland has not been using this information to divide travel into business and personal travel, as it is very common that personal cards are used during business travels. However, this information is very useful to decide if the transaction should be included in travel or not. An example would be that if enterprise card is used to purchase some goods, the assumption is that these goods will cross the border and will be included in international merchandise trade and therefore these transactions are deleted from the database. If the same purchase is done by individual card it is classified as travel. If individual card is used in e-commerce, the decision of include or exclude is based on the name of the sales/services provider. For some sale/services providers that can sell both electronic goods and physical goods the distinction can often be found in the name of the provider. However, if the provider is known mainly for physical goods their transactions are generally excluded.
- v. Country code of the sale/service provider.
- vi. Amount, in local currency.
- vii. Date, month and year, of the transaction.

10.27. The issues below must also be considered in the usage of the second database on credit card information:

- i. Large amounts are ATM withdrawals which cannot be identified. By assumption all ATM withdrawals are classified as travel.

- ii. E-commerce is difficult to recognize. However, results from on-going collaboration with the payment card companies has shown that it is possible to identify transactions where the card is not present at the location of the sale/service provider and preparation have been made to include this identification in the data received from the payment card companies.
- iii. The MCC categorization is imperfect and its quality is not known. For certain industries that are important for travel, like hotels, airlines and car rental, the MCC categorization is quite satisfactory.
- iv. Thousands of different sale/service providers which is difficult to gather information about.
- v. Timeliness. Transactions are recorded in the payment card data at the time of purchase not when the service is delivered. The assumption is that with regards to travel, the influence is not too high (only cases where accommodation is prepaid). With regards to information on Icelanders purchasing fares online from foreign airline companies retrieved from the payment card data the timeliness is a problem.
- vi. Some transactions, e.g. from Bouvet Island (where no residents are registered), are not reliable and can be incorrect.

10.28. Table 10.1 shows an example of how the data is processed, using all the available information. The real name of the sale/services provider is not published here.

Table 10.1
Example of processing payment card data in Iceland

SALE/SERVICES PROVIDER	MCC-ID¹⁹⁸	MCC NAME	SERVICE
The name implies that the purchase has been made at the location of the bookstore	5942	Bookstores	Travel
The name implies that the sale/services provider sells goods via Internet, i.e. books	5942	Bookstores	Excluded
The name implies that the sale/services provider sells services via Internet, i.e. e-books	5942	Bookstores	Other

10.29. In general and despite the challenges, Statistics Iceland is quite satisfied with the payment cards as a data source. The main advantages are:

- i. As credit card usage is very common among Icelanders, the source is very reliable for estimating expenditures abroad.
- ii. It greatly reduces response burden on local travel enterprises, as they only need in the services survey to give information on payments that are not done with credit cards. Collaboration with the local travel enterprises has shown that it is easier for them to exclude the payment cards transactions when responding to the services survey.

¹⁹⁸ For more details see also: <http://mcc-codes.findthedata.org/>, http://www.dm.usda.gov/procurement/card/card_x/mcc.pdf, http://www.irs.gov/irb/2004-31_IRB/ar17.html.

- iii. The cards are good source of timely detailed information with adequate coverage.
- iv. The use of data is not only limited to trade in services as the data is a good source for other units, for example tourism statistics and travel satellite accounts (TSA).
- v. It is possible to use the data to classify the alternative breakdown of travel, i.e. goods, accommodation, food-serving services and other services.

10.30. For improving the quality of the information obtained by credit card data Statistics Iceland is planning to include the variable for identification of “card not present”. Through this variable it is possible to identify e-commerce. The possibilities of receiving any other variables that might be useful are being explored. A continuous development of the processes, tests and databases is part of the quality process as well the further collaboration with the credit card companies. The local businesses are involved in the process and are closely collaborated with to ensure that all payment card transactions are excluded when delivering data to the services survey.

B.3. Mobile phone records

B.3.a. Country experience: Estonia

10.31. This sub-section describes¹⁹⁹ the methods of collecting tourism (travel) statistics on using mobile phone use records on the basis of using Estonian experience. Mobile phones are very widespread in various countries and enable compilers to obtain adequate statistics on inbound, outbound and domestic tourism. Since location metrics (geographical coordinates in time) data are an important part of mobile-based statistics, the method is usually generally called mobile positioning. However, in addition to location data, positioning data also include other important indicators about a person and his or her activities. The statistics gathered with the help of mobile phones can be divided into active and passive positioning data. In the case of active positioning, the collector of the statistics or the performer of a study finds phone owners and actively asks information about their location, themselves and their travel. In the case of passive mobile positioning, the data automatically stored in the memory files of operators or other systems are used for generating statistics. Both sources are important for creating estimates of the Balance of Payments and/or Tourism Satellite Account (see chapter 14.B.IV and chapter 16.A for mode 2). In this description, Estonian experiences in developing the statistics on the basis of the Positium Data Mediator software is used.

10.32. *Active mobile positioning.* In the case of active mobile positioning, information about the location of a phone, the user and the travel behavior of the user is found by making special inquiries, which generally requires the consent of the people chosen to the sample to participate in the study. Today, active positioning is related to surveys and software downloadable on smartphones, such as MySense, Posques, etc. As a result, it is possible to obtain very accurate information about the movement, means of transport, expenses and motivation of the chosen respondents. Active positioning data are geographically accurate; the smartphone-based studies mainly used for this purpose utilize GPS resolution of the

¹⁹⁹ Based on input by Rein Ahas, Department of Geography, University of Tartu; Margus Tiru, Positium LBS; Andres Kerge, Bank of Estonia.

accuracy of 1-10 m. Such detailed data enable data collectors to analyze mobility within the destination, conduct market research, etc. The weakness of active positioning is recruitment of respondents; most tourists do not want to download alien software onto their phones or respond to questions due to privacy concerns. Recruitment of respondents is also made more difficult by tourists staying in foreign countries and the different standards of foreign operators. Still, this area is a very important source of gathering more detailed tourism statistics for performing various studies. The mobile phone apps that automatically ask the right questions in the right place enable data analysts to conduct very detailed studies.

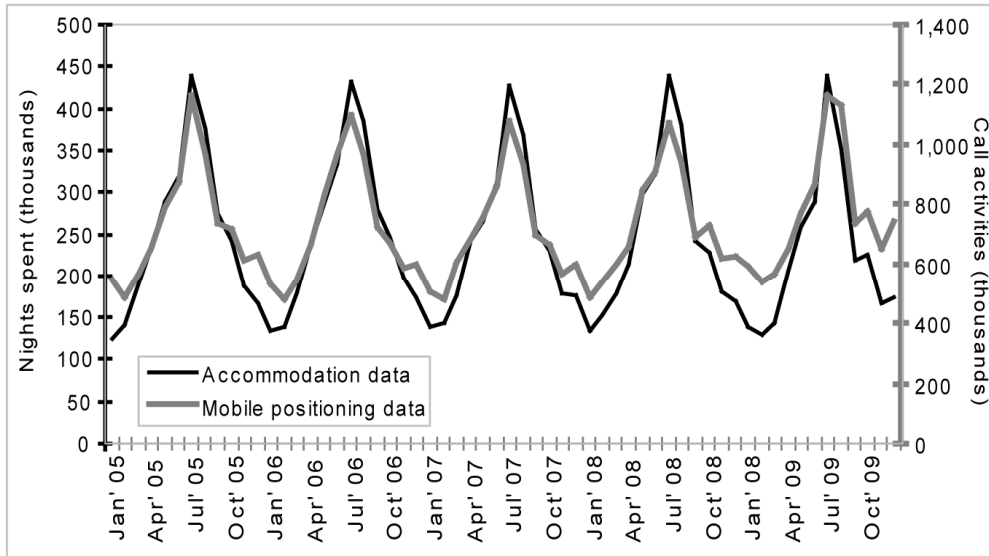
10.33. *Passive mobile positioning.* In the case of passive mobile positioning, statistical data are obtained from secondary sources of mobile phone use, which is most often the phone use information automatically recorded in the systems of operators – Call Detail Record (CDR), while Erlang, Anonymous Bulk Location Data (ABLD), among others. The advantages of passive positioning are the huge mass of data involving all phone users and the relatively cost-effective data collection method. The shortcomings, however, are protection of the privacy of persons, the difficulties in obtaining the data from operators and the lack of characteristics included in the data. The main convention for defining the residency of a traveler is by the residency of the mobile operator related with him/her. Other conventions for any other statistical purposes can be introduced as well. The use of passive positioning data in the area of tourism is rapidly growing, because it is difficult to get an adequate overview of the movements and mobility of people in the increasingly mobile world with open borders.

10.34. Call Detail Record (CDR) is one of the most widely used sources among the passive positioning data suitable for tourism statistics. The data are obtained from Data Warehouse or from the billing record of the mobile network operator's system; i.e., from the places where information is gathered about phone users from issuing invoices. The time of a call, the location of a call, the duration of a call, the cost and other characteristics are recorded as such information. Production of statistics from such data requires making the data anonymous and standardized, as well as checking the data, because the privacy of people and business confidentiality of operators need to be protected. CDRs are usually issued as impersonalized data, either aggregated for certain types of user groups or pseudonymously with randomly generated IDs. Spatially, the CDR data are usually issued with the accuracy of a network cell; the cell with its location is called the Cell Global Identity (CGI). This level of accuracy suits well for generating the main tourism statistics; the CGI is, however, not accurate enough for preparing detailed analyses of movements. For example, CGI can be used for definition of transit visitors in travel (airports and seaports, main transit lines thru the country, etc). Several data collection systems have been developed for using CDRs for tourism statistics. The systems used in Estonia are LBS and Position Data Mediator, developed by the Department of Geography of the University of Tartu, which is, for example, used by the Bank of Estonia for the travel item of Balance of Payments.

10.35. The methodology of preparing passive mobile positioning data requires adjusting the mobile data to correspond with the definitions of tourism statistics. The duration of a visit, the number of nights spent and transit tourism are assessed on the basis of ordering single call activities, with the uneven distribution of call activities in time and space posing a methodological problem. For this reason, it is necessary to develop algorithms for organizing data, segmenting visitors and the visits.

Figure 10.1

Comparison of incoming tourism statistics in passive mobile positioning data and accommodation nights in Estonia (Positium LBS)



10.36. In Estonia, algorithms are developed in the environment of Positium Data Mediator for segmentation and cleaning of data. For example, special methods are required for eliminating cross-border and accidental roaming noise. In the preparation of the base models of inbound, outbound and domestic tourism, Positium Data Mediator uses the data from Statistics Estonia and the results of the surveys regularly ordered from TNS Emor for calibration. These results are used to prepare a base model of data, which must be representative of various visitor segments and geographical areas and also take into consideration the market shares of various operators and the ranges of the radio coverages of various mobile networks.

10.37. Inbound tourism is determined on the basis of the log files of the roaming service of operators. The travelers (phone-owners) that have arrived to the destination from abroad are divided into visitors from different countries of origin on the basis of the registrations of the phones (so-called resident countries of the tourist or nationality); the duration of a visit is measured by each phone on the basis of the number of days at the destination when call activities were performed.

10.38. Outbound tourism is determined on the basis of the roaming log files of the phones originating from the countries of origin. Visiting statistics by countries are found on the basis of the temporal and spatial distribution of the call activities performed abroad; foreign visits are segmented according to the requirements of statistics, if necessary.

10.39. Determining domestic tourism is most complicated; it is determined on the basis of the local phone use data by applying the method of the anchor point model of Positium Data Mediator. The anchor point model is used to determine the places of residence and work of a phone user and his or her space of daily activities. According to the definition of domestic tourism, the number and times of the visits outside of the space of daily activities and duties are determined.

B.4. Studies/research of other institutions

10.40. Compilers could make use of studies/research of public/private institutions that include relevant statistical information for ITS. Typically, ministries may conduct special studies on industries they supervise and may conduct surveys for this purpose. The results of such surveys could be very useful sources for SITS.

B.4.a. Country experience: Australia - legal services statistics

10.41. The purpose of this section is to describe the collection and compilation of resident/non-resident trade in legal services statistics within the Australian Bureau of Statistics (ABS).

10.42. The ABS sources all data for legal services from a quarterly survey of resident Australian businesses, the International Survey of Trade in Services. The ABS captures data from a broad range of respondents, but not a complete range. Due to resource constraints and collection difficulties this restricts data to Mode 1, resident / non-resident transactions (as defined by the WTO).

10.43. The ABS is aware that its coverage and collection are also limited in not capturing sole traders in international legal services. There is evidence that a significant percentage of international trade in legal services is provided by consultants and sole traders. It is currently beyond the resources of the ABS to cover and process such a potentially large number of additional respondents. The true volume in resident/non-resident legal trade therefore can only be estimated or modelled based upon this anecdotal evidence.

10.44. The Australian Attorney-General's Department in 1990 established the International Legal Services Advisory Council (ILSAC). Amongst other tasks ILSAC produces an annual Statistics Survey on International legal trade. Unlike the ABS survey the ILSAC survey is sourced from data representing all four Modes of Supply. ILSAC also noted that when compiling data for international legal trade the ABS identifies earnings of overseas branches of Australian law firms as "returns on investment" rather than "exports", as the ILSAC survey does.

10.45. Initial results from the ILSAC Statistical Surveys shows that the ABS data is understating the extent of international Legal services trade. Significant efforts have been made in recent years to improve the quality of ABS data and as such the ABS is in contact with ILSAC to better align the data provided by both organisations. It is now possible to reconcile the differences which continue to appear on an annual basis between data published by both the ABS and ILSAC. As the two surveys become better aligned the size of trade in legal services can be more accurately measured.

10.46. The legal services data currently obtained by the ABS on a quarterly basis is compiled solely from the Survey of International Trade in Services. The data is collected on a country/dollar value basis asking only for the value of receipts and payments of total legal services. The data is then disaggregated internally by the ABS to provide outputs by State/Country to be more meaningful to users in State Government agencies and other relevant organisations.

10.47. The final trade in legal services statistics are published on a quarterly and annual basis, as part of the International Trade in Services (SITS) series of publications, and posted for general access on the ABS website.

Box 10.3

Experience of the Netherlands in use of other data sources

In the Netherlands, other data sources are used for the following purposes: to compile specific information for travel; to compile time series estimations for services that are not part of the direct data collection and have no further data source; for the CIF FOB correction (from Trade in goods); for SPE figures; for MFI figures; and for FISIM information (from National accounts).

Data of other services are produced by using supplementary components or by model estimation. For example, travel statistics are based on specific sources, namely the Continuous Holiday Survey for outbound travel and the Survey on Accommodation and price indices for inbound travel, whereas financial services are estimated by combining information of Monetary Financial Institutions, Top enterprises, and the X12 ARIMA Seasonal Adjustment Program. The CIF FOB correction is made for freight transport and freight insurance services on the basis of FTS contract information.

With the start of BPM6, data for certain services will partly be compiled in co-operation with the Central Bank (and national accounts). These include for example the export of insurance services, where the export data of insurance companies are collected by the Central Bank and the national account data compilers are responsible for deriving insurance services from data on insurance premiums.

Chapter 11 Comparing Data Sources

11.1. *Scope.* This Guide has classified various source data into five categories: enterprise and establishment surveys, surveys on persons and households, international transactions reporting system (ITRS), administrative records and other data sources. Each of these categories is explained from Chapter 6 to 10. This chapter provides a broad comparison of advantages and disadvantages of these sources in the context of practical tasks which countries face in compiling various EBOPS components as well as FATS and mode 2 and 4 persons/trips. Integration of data from different sources, discussed in Chapter 13, is linked to the comparison of data sources set out in this Chapter. The Chapter consists of the following sections: Introduction (Section A), Comparison of data sources for resident-nonresident transactions (Section B), Comparison of data sources for FATS (Section C), Comparison of data sources for mode 2 and 4 (Section D), and Country experiences (Section E).

A. Introduction

11.2. This chapter compares all categories of data sources (enterprise and establishment surveys, surveys on persons and households, international transactions reporting system (ITRS), administrative records and other data sources) from a bird's-eye view so that the analysis of pros and cons will be useful for the discussion of data integration from different sources in Chapter 13 as well as for the discussion of the data compilation issues with respect to the different categories of EBOPS, FATS and other indicators for modes of supply, respectively in Chapters 14 - 16.

11.3. The Guide discusses the comparison of data sources by grouping resident-nonresident transactions into five categories: transport, travel, manufacturing services, government services and other services (excluding manufacturing and government services). Also this Guide discusses the sources of FATS as well as mode 2 and 4 persons/trips.

11.4. The advantages and disadvantages are analysed from the point of view of five dimensions of: coverage of transactions (C), accuracy of reporting (A), timeliness and frequency (T), relevance (R), burdens of reporting and processing data (B). (+) implies advantages and (-) implies disadvantages in terms of each element.

B. Comparison of data sources for resident-nonresident transactions

B.1. Comparison of data sources for manufacturing services

11.5. Data on manufacturing services could be collected most preferably through surveys on manufacturing companies organising international production for imports and on processing companies/sole-proprietorships for exports. Respondents may need to understand the scheme of production networks. ITRS captures processing fees paid to processors. Thus transactions without settlements, which can occur typically between affiliated enterprises, may not be captured timely or correctly. In some countries, customs data can be used but it is widely recognised that the difference between the amount of imports and that of exports for processed goods do not necessarily represent the amount of manufacturing services. But customs data are useful in identifying companies engaged in processing.

Table 11.1

Comparison of data sources for compiling manufacturing services

	Enterprise and Establishment Surveys (EES)	ITRS	Administrative Records (AR)
Coverage of Transactions (C)	<Im/Export> (+) cover major resident enterprises above a threshold (-) may not fully cover resident SMEs	<Im/Export> (++) cover settlements related to transactions (-) does not cover settlements under thresholds	<Im/Export> (+) customs data could be useful for identifying manufacturing services or processing companies if declaration forms are adjusted
Accuracy in Reporting (A)	(+) high. May require explanatory notes/follow up for the case where processors do not fully understand the scheme of the production network	(+) high if settlements of processing fees are not included in other categories, e.g. in the transactions between affiliated enterprises; may also include payments for other goods and services	(+) high, if flows are properly identified
Timeliness, Frequency (T)	(-) often (not always the case, lag of more than one month, quarterly	(+) lag of a few days, monthly	(+) lag of a few weeks, monthly
Relevance (R)	(+) can collect detailed information on manufacturing activity	(+) high if different processing-related transactions are identified by separate transaction/codes	(-) difference between imports and exports does not necessarily represent services
Burdens of Reporting and Processing Data (B)	<Report> (-) high <Process> (-) may be high in case of the difficulty of grossing up	<Report> (-) high especially for banks reporting on behalf of transactors <Process> (+) low once implemented	<Report> (+) low if no additional work <Process> (+) high in terms of coordination with data collecting units

B.2. Comparison of data sources for transport

11.6. Enterprise and establishment surveys of resident and non-resident carriers are the main sources to collect transport services data for several countries. These surveys could be elaborated enough to cover most of EBOPS categories related to transport services. Compilers may face difficulties in getting a representative coverage of the non-resident carriers' activities. However, when transport is regulated in a country (air transportation being the best example), non-resident carriers have to be registered to operate and they typically establish branches or agents in that country. Thus, compilers could send survey questionnaires to those branches/agents. Alternatively countries can survey importers/exporters about their transport expenditures.

11.7. Passenger transport can be based on the data on passenger fares of international transportation, which are obtained through travellers surveys. The same limitations seen in travel services (capacity of the respondent to provide the right information and knowledge of the population) would apply.

Table 11.2

Comparison of data sources for compiling transport services

	EES	PHS	ITRS	AR
C	<Import> (+) general enterprise surveys cover transactions by residents (+) surveys on agents/branches of non-resident carriers partly cover imports of residents <Export> (+) specific surveys cover major resident carriers providing services to non-residents (-) may not fully cover resident small carriers and non-resident carriers	<Import> (partly +) household surveys can cover transport service imports by residents as well as passenger fares paid for travelling abroad <Export> (-)border surveys provide information on passenger fares assumed by non-residents	<Im/Export> (+) cover settlements related to transactions (-) does not cover settlements under thresholds and freight exports, where the exporter contracts a resident carrier <Imports> (-) may be difficult to capture freight export and import on MSITS 2010 concept	<Import> (+) customs data could be useful for identifying freight costs (-) do not cover transport occurring between two foreign countries
A	(+) high	(-) travellers may not identify cost components of package tour; depends on sample representativeness for international transactions	(+) high but compilers need to pay attention to partner country attribution.	(-) difference by types of merchandise cannot be fully reflected
T	(-)often (not always the case, lag of more than one month, quarterly	(-) lag of more than one month, quarterly	(+) lag of a few days, monthly	(+) lag of a few weeks, monthly
R	(+) can be designed so that relevance is ensured	(+) can be designed so that relevance is ensured (-) recollection of information may be approximate	(-) cannot be designed easily to identify complex transactions	(-)typically cannot be designed so that freight costs can be identified
B	<Report> (-) high <Process> (-) high in case of the difficulty of grossing up	<Report> (-) high <Process> (-) high in case of the difficulty of grossing up	<Report> (-) high especially for banks reporting on behalf of transactors (-) high in terms of aggregation of micro data <Process> (+) low once implemented	<Report> (+) low if no additional work <Process> (-) high in terms of aggregation of micro data or coordination with data collecting units

11.8. ITRS may cover most exports and imports of transport categories except for freight exports under fob contracts where the transporter is a resident and imports of freight transport, which in the case of c.i.f. contracts are usually included in the value of merchandise. Compilers need supplemental information for establishing estimation methods of imports of freight transport. When compilers depend on the ITRS, they should pay attention to the case, especially in marine shipping, where country of operations is different from country of registration of the ships or the country of residence of owners.

11.9. Administrative records such as the customs documents, if they include information about the commodity traded, weight, the origin and destination, and the mode of transport,

could provide useful information for modelling freight costs. Obviously, this also depends on the information available about the carrier involved. For example, differences in transport costs by types of merchandises may not be fully reflected in such information. Administrative records will not be helpful for transport of cargo or passengers occurring between two foreign countries and might be a weak source to model transactions related to auxiliary services.

B.3. Comparison of data sources for travel

11.10. Travel services are unique in comparison with other services in that their consumption is entirely affected by individuals and not by enterprises.

11.11. The most efficient way to collect data on travellers could be through surveys on persons and households where sample of travellers are asked to report more or less details on their spending while outside their home country. However, there are certain limitations to such surveys. The first issue comes from the capacity to reach travellers, notably non-resident travellers at the time they leave the country. Reaching resident travellers when they return to their home country is also a difficult task but they can be inquired later on through household surveys.

11.12. Travellers are not like enterprises, which have to maintain in accounting system. Travellers may not have a perfect idea of all their expenses made during the trip especially if they have to fill the survey while they are on their way to leave the country. Some expenses could have been paid well in advance such as the hotels or some transport. Expenses engaged by a business traveller could be paid or reimbursed by its enterprise. In certain circumstances, the traveller may even not know the value of transactions paid by its enterprise.

11.13. As any sample survey, entities (enterprises or individuals) surveyed must be representative of the population, otherwise the result of that survey could be suspicious and suffer great variations from period to period. There is no registers for travellers so countries should look at administrative records or other sources that could play a role of register. For some countries, even the evaluation of the number of people crossing the borders represents a challenge when there are borders unions (this is the case for EU countries).

11.14. ITRS could cover payments by resident and non-resident travel agencies as well as large amount of travel spending. Payments by travel agencies correspond to the expenses of hotels, domestic transportations, meals during the trip etc. Also, transaction data of foreign exchange bureaus could be proxies for the travel spending. However, such data could contain non-travel transactions and their weight in total travel spending as payment instruments could become varied. Another potential weakness is that payments and services may not occur in the same time period.

11.15. Other data sources such as credit and debit card transactions could also be explored. These sources are not perfect, as purchases with credit card or withdraws with debit card could have other purposes than travel spending. Therefore, further information from the credit and debit card transactions should be utilized, such as the merchant code and the information concerning the point of sale, in order to identify the relevant travel transactions. Travellers do not always use a card as a way of payment. Transactions could be concluded in exchange of cash or be paid by a third party. However, this information might be very helpful to establish trends and geographical breakdown and if offers a much larger sample than probably any surveys on persons or households.

Table 11.3

Comparison of data sources for compiling travel services

	EES	PHS	ITRS	AR	ODS
C	<p><Export> (+) cover major resident suppliers, e.g., travel agencies, hotels, hospitals, education facilities <Imports> (-) do not cover non-resident suppliers</p>	<p><Export> (+) border surveys capture expenditures by non-residents <Imports> (+) border or household surveys capture expenditures by residents</p>	<p><Im/Export> (+) cover settlements by resident and non-resident travel agencies (+) capture large amount of expenditure by travellers (+) data of foreign exchange companies cover most foreign exchange transactions by individuals if not paid in advance (-) does not capture travel arrangements through internet (-) does not cover settlements under thresholds</p>	<p><Im/Export> Registration of immigration office can be used for identifying number of travelers; official records may be used for students, medical patients (-) possibility of abrupt suppression of sources</p>	<p><Import> (+) cover most credit/debit card payments (+) mobile phone records can be used for identifying number of travellers Data models? Partner country data?</p>
A	<p>(+) high if the service suppliers fully understand the residency of the customers</p>	<p>(-) possibly depend on unrepresentative samples and frequency of the survey (-) travellers may not identify cost components of package tours (-) recalling errors might exist for household survey</p>	<p>(-) payments and services may not be in the same period (-) foreign exchange data do not represent entire expenditure and can include non-travel payments</p>	<p>(-) depend on immigration control, but some countries may not identify international travellers</p>	<p>(-) credit/debit card data can include non-travel payments</p>
T	<p>(-) lag of more than one month, quarterly</p>	<p>(-) uncovered periods may exist when the survey is not frequently conducted (-) lag of more than one month (border surveys more timely), quarterly or annually</p>	<p>(+) lag of a few days, monthly</p>	<p>(+) lag of a few weeks, monthly</p>	<p>(+) lag of a few weeks, monthly</p>
R	<p>(+) can incorporate expenditure by products partially</p>	<p>(+) can incorporate detailed questions, e.g.</p>	<p>(-) cannot be designed easily so that detailed travel</p>	<p>(-) cannot be designed easily so that travellers are correctly</p>	<p>(+) if non-travel amounts can be excluded</p>

	(-) recollection of information may be approximate	expenditure by products	expenditures are correctly collected	identified	
B	<Report> (-) high <Process> (-) high in case of the difficulty of grossing up	<Report> (-) high for high-response-rate household surveys <Process> (-) high for border surveys in operation costs (-) high if grossing up survey results is difficult	<Report> (-) high especially for banks reporting on behalf of transactors <Process> (+) low once implemented	<Report> (+) low if no additional work <Process> (+) high in terms of coordination	<Report> (+) low if no additional work <Process> (+) high in terms of coordination

B.4. Comparison of data sources for other services (excluding manufacturing and government services)

11.16. For most of the other services, enterprise/establishment surveys could provide a large share of sources for estimates. The advantage of these surveys is that they could be designed to collect specific information corresponding habitually to the compilers' needs.

11.17. Surveys are however costly to process. It requires contacting the respondents, making follow-ups, compiling the results, editing and imputing for non-response, etc. Surveys are also costly for the respondents as they have to train employees to complete questionnaires. And this is particularly true for transactions in services which are not transactions easy to extract from accounting documents in comparison to some financial transactions for example. Increasing the response burden to small entities could be counterproductive as it could affect the interest of these small entities to respond to other surveys for which the presence of these entities is more important.

11.18. To improve the efficiency in data collection, enterprise/establishment surveys could specifically designed to target a specific activity or a specific industry. Respondents could then be asked to provide more details for which they are likely involved and less details for other services where they expect to have negligible impact.

11.19. As any other surveys, the degree to which a sample is representative of the population is a key indicator in the quality of the results. Compilers should take advantage of all other available sources of data to supplement and validate survey results, and to reduce processing costs and reporting burdens.

11.20. ITRS has the great advantage of providing a large coverage than what enterprise or establishment surveys could do. ITRS comes with a strong degree of obligation for the respondents to provide the information requested. ITRS data may require low compiling costs, giving the opportunity for the compilers to allocate the resources where coverage needs to be implemented. However, in some cases, it might be difficult to incorporate details, e.g. EBOPS, in reporting forms.

11.21. Administrative records cover a large part of transactors. For example, the goods sent abroad could be extracted from administrative records (customs data) but additional information is required to calculate the value of maintenance and repair. Tax or finance

department has certainly a great power to convince respondents than a statistics agency. The source may be available at low or no cost. The counterpart is that if the main purpose of the source is not produce statistics, the validation of the results might not be adequate for the compilers' needs.

Table 11.4

Comparison of data sources for compiling other services (excluding manufacturing and government services)

	EES	ITRS	AR	ODS
C	<Ex/Imports> (+) surveys cover major resident enterprises (-) may not fully cover resident small enterprises	<Im/Export> (+) cover settlements related to transactions (-) does not cover settlements under thresholds	<Im/Export> (+) customs data could be useful for identifying the goods sent for repair abroad but less in obtaining the value of maintenance and repair services	<Export> (+) data on financial market and institutions are useful complementary sources for estimating insurance and financial services
A	(+) high	(+) high if settlements of transactions are not included in other categories, e.g. in the transactions between related parties	(+) high	(+) high, if resident/non-resident transactions separately identified
T	(-) lag of more than one month, quarterly	(+) lag of a few days, monthly	(+) lag of a few weeks, monthly	(+) data are provided timely and frequent
R	(+) can incorporate detailed questions, e.g. complex transactions, construction services, and EBOPS, relatively easily	(+) all the resident non-resident transactions can be captured once the system is designed properly (-) cannot distinguish construction services from FDI easily	(-) cannot be designed easily for statistical purposes	(-) cannot be designed easily for statistical purposes
B	<Report> (-) high <Process> (-) high in case of the difficulty of grossing up	<Report> (-) high especially for banks reporting indirectly on behalf of transactors <Process> (+) low once implemented	<Report> (+) low if no additional work <Process> (+) high in terms of coordination with data collecting units	<Report> (+)very low addition cost <Process> (-)high if statistical techniques need to be used

11.22. While surveys and the ITRS cannot be used to directly derive services such as FISIM or insurance services which need extra information and require models to be generated, surveys or ITRS could provide important elements for calculation and estimation of these service items. Commercial database on financial institutions and/or markets could also be useful for these items if sufficient detail is available.

11.23. For construction services, surveys may provide more detailed and relevant data than the ITRS due to its biases, as discussed in Chapter 8.

11.24. In some circumstances, surveys on persons and households could be useful. Although normally small in comparison with enterprises or establishments transactions, purchases of electronically products downloaded by individual consumers or commissions paid directly to

non-resident brokers by individuals directly buying or selling securities abroad would likely to be covered only through such surveys.

B.5. Comparison of data sources for government services

11.25. The majority of government services transactions are commonly compiled through administrative records. For some components, such as goods and services acquired by staff and their dependants working in enclaves (diplomats, military personnel, etc.), these transactions could be obtained through surveys to embassies. For example, data on number of diplomats and other government employees working and their earnings could be collected so that these expenses can be estimated.

Table 11.5

Comparison of data sources for compiling government services

	EES	ITRS	AR	ODS
C	<Import> (+) surveys (less likely) on own country's governmental agencies cover government services provided by residents <Exports> (-) surveys on embassy cover government services consumed by non-resident	<Im/Export> (+) cover settlements related to transactions (-) does not cover settlements under thresholds	<Im/Export> (+) the central bank dealing with international settlements of the central government may provide comprehensive data or Administrative records from Ministry of Foreign Affairs (-) transactions in kind are not covered	<Export> (+) budget data and statements of government accounts provide information on costs of government services
A	(+) high if sufficient responses	(-) can include payments of other goods and services	(+) high	(-) budget data are mere assumption
T	(-) lag of more than one month, quarterly	(+) lag of a few days, monthly	(+) lag of a few weeks, monthly	(-) publication of statements not timely
R	(+) can incorporate detailed questions	(+) all the resident non-resident transactions can be captured once the system is designed properly (-) difficult to capture transactions between foreign governments' enclaves <i>located in the reporters economy</i>	(-) cannot be designed so that necessary data can be identified	(-) cannot be designed so that necessary data can be identified
B	<Report> (-) high; foreign embassies may not report <Process> (-) high if estimation is needed	<Report> (-) high especially for banks reporting on behave of transactors <Process> (+) low once implemented	<Report> (+) very low additional costs <Process> (+) high in terms of coordination	<Report> (+)very low additional cost <Process> (-) high if estimation is needed

C. Comparison of data sources for FATS

11.26. With respect to FATS, enterprise/establishment surveys provide the most useful information. Administrative records or commercial database on foreign affiliates are also useful but their forms and questionnaires cannot be easily designed to provide useful data for statistical and analytical purposes. Thus, they could rather be used as supplements to the survey on foreign affiliates.

11.27. In contrast, ITRS, which provides strong sources for resident-nonresident transactions, is not necessarily useful for compiling FATS. This is simply because ITRS does not collect data on foreign affiliates. Although ITRS captures settlements between foreign affiliates and residents, such information is not enough for measuring the entire activities of foreign affiliates.

Table 11.6

Comparison of data sources for compiling FATS

	EES	ITRS	AR	ODS
C	(+) cover foreign affiliates of major resident enterprises (-) may not fully cover foreign affiliates of resident SMEs	(-) cannot collect data on foreign affiliates	(+) business registers, tax returns or regulatory reports cover most resident enterprises and are useful for inward FATS	(+) Commercial database, e.g. financial statements of major enterprises, could be useful for outward FATS
A	(+) high		(+) high	(+)high
T	(-) lag of more than one month, quarterly		(+) lag of a few months, annually	(+) lag of a few months, annually
R	(+) can incorporate detailed questions		(-) cannot be easily designed for statistical purpose	(-) cannot be designed for statistical purpose
B	<Report> (-) high <Process> (-) high in case of the difficulty of grossing up		<Report> (+) low if no additional work <Process> (+) high in case of the needs of coordination with data collecting units	<Report> (+) no addition costs <Process> (-)high in case of the needs of statistical techniques to use data

D. Comparison of data sources for mode 2 and 4

11.28. Table 11.7 and 11.8 provide an overview of the different sources from which number of modes 2 and 4 trips and/or persons and some of their characteristics could be drawn.

11.29. The table 11.8 summarizes the most likely possible sources that can be used for collecting information on the number of mode 4 persons/trips, depending on the category of mode 4 of interest and the direction of the movement of persons (i.e. from the perspective of "receiving/host" countries, i.e. incoming, and from the perspective of "sending/home" countries. It, of course, depends on how residence is defined in each country, as well as the laws and regulations in place for migration and trade in services policy and how this can be used in a statistical context.

Table 11.7

Comparison of data sources for compiling mode 2 movements of persons

Quality dimension	Sources of data			
	Enterprise and establishment Surveys	Surveys of persons and households	Tourism and travel surveys	Administrative records
Relevance to methodologies	(+) can be designed so that relevance is ensured	(+) can be designed so that relevance is ensured	(+) can be designed so that relevance is ensured	(-) cannot be easily designed/modified
Coverage of transactions	<p><Demand side/outgoing> (+)Enterprise surveys can include questions on travel of individuals to consume services on behalf of their employer.</p> <p><Supply side/incoming> (+)Can include questions on individuals coming into a country to consume services produced by the enterprises surveyed (tourism establishments, and particularly interesting for education or health)</p>	<p>< outgoing> (+) Household surveys can include questions on travel of individuals to consume services on their own behalf Labour force surveys can include questions on travel of individuals to consume services (i.e. in the context of business trips, and more particularly on behalf of their employer) < incoming> (+)Most likely not relevant (+) receiving/sending countries exchange of information (-) tendency to underestimation, bias in the data</p>	<p>< /outgoing> (+)Border surveys provide more detailed information on the number of visitors leaving the country (-) some adjustments to fit both tourism and trade in services concepts will be needed (-) sample size might need to be increased</p> <p><incoming> (+)Border surveys provide more detailed information on the number of incoming visitors to the country (as they are leaving) (-) some adjustments to fit both tourism and trade in services concepts will be needed (-) sample size might need to be increased</p>	<p>< outgoing> (+) Border counts, entry exit cards can be used as first estimates of number of mode 2 travellers leaving the country to consume services</p> <p><incoming> (+) Border counts, entry exit cards can be used as first estimates of number of mode 2 travellers entering the country to consume services</p>
Timeliness and frequency	(-) time lag of more than one month, quarterly	(-) time lag of more than one month, quarterly	(-) time lag of more than one month, quarterly	(+) time lag of a few weeks, monthly
Burdens of reporting and compiling data	<p><Reporting> (-) high <Compiling> (-) high in case of the difficulty of grossing up</p>	<p><Reporting> (-) high <Compiling> (-) high in case of the difficulty of grossing up</p>	<p><Reporting> (+) low if no additional work <Compiling> (-) high in terms of aggregation of micro data or coordination with data collecting units</p>	<p><Reporting> (+) low costs <Compiling> (+) high in terms of aggregation of micro data and re-use of existing data (-) or coordination with data collecting units</p>

Table 11.8

Summary of possible sources for the number of mode 4 persons/trips by category of mode 4 and direction of movement (incoming/outgoing)

	Contractual service suppliers		Intra-corporate transferees	Services sellers/ commercial presence negotiations
	Employees	Self-employed		
Incoming persons/trips				
E/D cards	X	X	X	X
Work permits/visas, immigration records	Only if coverage corresponds to MSITS2010 definitions (coverage of visa, short-term, long-term etc.), but maybe application forms can be used (see row below)			
Of which, permit and visa application forms	X	X	X	X
Registers of persons		X (if becomes resident)	X (if becomes resident)	
Legislation implementation register		X (if becomes resident?)		
Commercial registers		X		
Trade in services survey	X	X		
Inward FATS survey	X	X	X	
Outward FATS survey			X	
General enterprise survey	X	X	X	
Structural Business Statistics	X	X	X	
Household/Labour force survey		X (if becomes resident)	X (if becomes resident)	
Population census		X (if becomes resident)	X (if becomes resident)	
Border survey (whether when entering or leaving the country)	X	X	X	X
Outgoing persons/trips				
E/D cards				
Work permits/visas, immigration records				
Registers of persons	X	X	X	
Legislation implementation register	X	X		
Commercial registers		X		
Trade in services survey	X	X		
Inward FATS survey	X		X	X
Outward FATS survey	X		X	
General enterprise survey	X	X	X	X
Structural Business Statistics	X	X	X	X
Household/Labour force survey	X	X (if remains resident)	X (if remains resident)	X
Population census	X (if remains resident)	X (if remains resident)	X (if remains resident)	
Border survey(whether when entering or leaving the country)	X	X	X	X

11.30. The potential sources of data on persons and trips to be compiled under mode 2 and 4 include administrative records, population censuses, border/passenger surveys, household (including labour force) surveys, enterprise surveys and business statistics.

D.1. Administrative records

11.31. Administrative records relevant for collecting information on modes 2 and 4 and considered in this chapter include records of immigration authorities, such as entry/departure cards, visa application records, work permit records, passport data records, and registers of individuals.

11.32. The administrative records can be used for several purposes including (a) obtaining the most complete count of the relevant population that is travellers leaving a given country to consume services in other economies or entering them to consume services in the compiling country and (b) provide information on certain characteristics of such travellers and (c) provide a sampling frame for various surveys intended to collect additional information missing in such records.

11.33. *Use of immigration records and E/D cards for collection of data on Mode 2.* The administrative records, in particular E/D cards, can be an important source of information on the population of natural persons moving between countries or staying in them under modes 2 and 4 including on the total numbers of such persons as well as some of their characteristics. However, the use of such records requires that SITS compilers have a clear understanding of their coverage and content, most importantly:

- i. *The geographic coverage of E/D data* needs to be clearly stated. This implies that the following questions can be answered: Which border crossing points and what types of border crossing are covered by border control operations? Does this control apply to air passengers only, or does it also cover other types of arrival (by sea, by land, by river, etc.)? The clarity of the geographical coverage is particularly relevant for countries with long and open international land borders or borders delimited by rivers, where geography makes crossing the border easy or where border controls are absent at some crossings. Border control authorities usually will have an estimate of what is beyond their present control procedures, but this estimation might need to be permanently monitored to detect changes over time.
- ii. *What categories of persons are covered?* Are there specific conditions that exclude some persons from border controls, in addition to those represented by the non-controlled crossing points? What is the situation for nomads, refugees, border workers, etc.? In many countries, nationals are often exempted from border controls or detailed reporting requirements (and from completing an E/D card where such cards exist, even if they reside abroad). Frequent border crossers may have special permits, may not be registered for each crossing, may be excluded from the controls altogether, or may be covered only by a global estimate. Finally, certain types of border crossing might be subject to less cumbersome procedures (for instance private airports, or land borders used by nationals of neighbouring countries).
- iii. *What is the actual content of the data?* The access to detailed micro-data in order to make possible debugging, correction of invalid codes, in addition the variables available and their value sets should be ensured. In general, countries should not expect border control operations to provide all the information needed to measure traveller and visitor flows, and to include all the required variables and the type of distinctions that would be needed for description and analysis. This is an important issue and must to be further analyzed, as some countries are sometimes satisfied with the mere existence of such a source and proceed to its use without

looking into whether it adequately captures all the necessary specific information needed to measure mode 2 and 4, and consider whether quality is acceptable. A recurring example is that of many E/D cards that do not request the residence of the respondent, only the nationality. In the best of cases, the data provided will be sufficient to define the framework for a border survey covering characteristics of interest. Additionally, not all controls in a given country will be the same at all border points; nor will the questions asked (questions at land borders, for instance, might be kept to a basic minimum, because of the time constraint).

iv. *Quality of the data collected* has to be assessed. There are various repeated inconsistencies in the information taken from administrative sources that stem from the latter's specific functions. The main interest of border control authorities, for instance, is controlling the flows of non-nationals; and as a consequence other data are of less direct interest to them and are not always well collected or stored (e.g., a national's country of residence, origin or destination— often different from the origin or destination of e.g. the flight—, detailed purpose of trip). Their concern is that the declared purpose be consistent with the type of visitor's visa or resident permit presented. This may induce travellers to declare a purpose in line with their visa, e.g. recreation instead of convention/conference, or seeking business opportunities. Revisions, checks and controls are needed to make E/D card information usable for purposes other than migration.

11.34. In order to improve this source of data UNWTO proposed a revised version of E/D card.

Table 11.9

List of data items in the UNWTO proposed E/D card

Information items	Usefulness for tourism statistics
Date	Useful for cross-checking with other sources
Name	Not useful for tourism statistics
Surname	Not useful for tourism statistics
Sex	Useful
Civil status	Useful
Date of birth	Useful
Place of birth	Not particularly useful for tourism statistics
Nationality	Useful
Occupation	Useful
Current country of residence	Useful (also for stratification of the universe)
Address in visited country	Could be useful for tourism statistics along with port of entry in multiple destination countries
Passport number	Not useful for tourism statistics
Place of issue	Not useful for tourism statistics
Date of issue	Not useful for tourism statistics
Type of passport	Not useful for tourism statistics
Type of visa	Useful to identify certain categories of border crossers and to determine which are non-tourists:
Port of entry	Useful (also for stratification of universe)
Mode of transport	Useful (also for stratification of universe)
Flight number or name of ship	Useful for cross-checking with other sources (*)
Airline	Useful for cross-checking with other sources (*)
Intended length of stay	Initial indication as to actual length of stay; needs to be confirmed
Accommodation	Initial indication as to actual accommodation; needs to be confirmed
Purpose of travel	Initial indication as to actual purpose of travel (also useful for stratification of universe)

11.35. The proposed E/D card developed by UNWTO takes into account the necessary variables for the measurement of travellers' flows useful for tourism statistics as well as

for modes 2 and 4. Trips of persons entering the country might be observed at the same time for mode 2 and for mode 4: mode 2 has to do with the personal expenses, whereas mode 4 has to do with their purpose for entering the country and the mode of remuneration (by a non-resident in order to perform a specific task in the country of reference if an employee of a foreign firm). If a further differentiation of the business purpose is recorded on the E/D card, e.g. intra-corporate transferee or employment by a local business, then this can be used to identify mode 4 of supply.

11.36. However, in countries that require a temporary work visa for mode 4, at least for citizens of some countries, administrative records from the issuing department (usually the Ministry of Immigration) may be a more reliable source of information. If there is no requirement for a specific visa (for instance for the duration of the stay or its repetition), the proposed E/D card might not always enable identifying mode 4, unless a “purpose of trip/visit” is requested. Identifying the actual purpose of a trip/visit in the case of travellers under mode 4 might not be possible using E/D cards if they are managed by immigration authorities. The declared purpose of trip may be distorted by the type of visa/permit that has been issued. In the case when business visas are used, they can be directly identified using immigration data. Moreover, it is usually recommended that E/D cards identify the different subsets of travellers (such as visitors) through indirect observation of derived characteristics²⁰⁰.

11.37. Also it should be noted regarding mode 4, that the interest might not be on the total number of trips, but on the combination between number of persons, number of trips taken by these persons and duration of each trip and total per person. The above mentioned E/D card could inform on repetition of trips, only if the persons are uniquely identified in those records, and the registrations at different border crossing points are stored in the same database. This is necessary to make possible linking the different trips made by the same person.

11.38. *Work permits and visa application records.* Concerning statistics based on work permits (see Chapter 9) and visas issued, only those permits relating specifically to mode 4,²⁰¹ or are clearly identified as a sub-group of a mode 4 category, can be used as such. An additional possibility could be that immigration registers include relevant information.²⁰² This is rarely possible.²⁰³ A solution could be to add questions to visa/permit application forms to get more detail on the reasons for migration, visit or permit request, and, consequently, obtain information more directly related to mode 4 as defined in MSITS 2010, and therefore be comparable between countries. For example, current visa information may indicate the length of stay or whether a migrant is moving under

²⁰⁰ See “Tourism as an International Traded Services (2005) paragraph 2.45.

²⁰¹ As defined in MSITS 2010.

²⁰² Actually such information is often used by analysts and policy makers to support decisions, including concerning labour migration. By ensuring that relevant mode 4 information is also included and reliably recorded in such a source would greatly improve the understanding of the different types and characteristics of international movements, and consequently help making the distinction between labour migration and mode 4 trade in services.

²⁰³ It is important to note that in certain cases countries have established commitments based on existing specific types of visas or working permits, which may or may not comply with the definition of mode 4 as defined in MSITS 2010 (i.e. it may have been designed to serve complementary or additional administrative needs). When this information is used to analyse mode 4, it should be clearly specified that such information relates to the commitment made, but does not necessarily refer to mode 4 as defined statistically.

entrepreneur, or skilled migrant categories,²⁰⁴ but may not be able to tell us whether a person is moving as an intra-corporate transferee, or is being directly recruited by an overseas service producing company. In general, statistics on visas granted for work (or education) reasons are available, however breakdown for reason to stay (employment contract or service contract; official residence permits categories) and short term visas of less than 3 months are not covered.

11.39. The MSITS 2010 sets out the framework to define mode 4, and does this in the context of the existing tourism and migration statistical recommendations. The compilers should review that framework and in particular table V.3 in MSITS 2010, which presents the *Links between the coverage of the Recommendations on Statistics of International Migration (RSIM), Rev.1 and that of IRTS 2008 in terms of purpose of trip or migration and length of stay, and identifies categories of interest for GATS Mode 4.*

11.40. *Registers of individuals* (e.g. population registers, registers used to assist in the implementation of legislation, or for monitoring specific or overall activities) could be used, in particular when they relate to a specific relevant part of the population. Once again, it is important to analyse to what extent such a source can be used for statistical purposes (i.e. type of information included, reasons for inclusion in a register, how the data are stored in the register). Although their use is clearly a possibility from the perspective of receiving countries, the use of a register type of source could be particularly relevant in some "sending" countries where mode 4 movements are important and in the case such information is recorded in a register (e.g. labour ministry, or a specific sectoral ministry such as health, transport, etc.) or any other official source.

11.41. The compilers have to ensure that it is possible to distinguish between those going abroad for employment purposes and those travelling for business purposes as defined in MSITS 2010 chapter 5 (i.e. most likely on the basis of services contracts, but it would be necessary to ensure that it does not also cover those travelling abroad for negotiating purposes), movements with multinational companies etc. Registers used to assist in the implementation of a legislation (e.g. for tax purposes) may in particular be useful for sending countries in the context of mode 4 self-employed persons (i.e. those who remain residents of their economy of origin). The use of such a source would be particularly relevant if it is possible to link information on individuals from this source with information on the same individuals from other sources. Also, it is important to identify if this is legally (and statistically) feasible.

11.42. *Business registers.* It is a good practice to use business registers to identify the mode 4 self-employed population because merchants and small-manufacturers (self-employed or running one-man companies) should be registered in them. An indication of cross border trade activities might be also available.

11.43. Administrative records alone will not be sufficient to provide all necessary information and should be supplemented by other sources. As described below, population censuses and various surveys could be used to complement the information derived from

²⁰⁴ See also: <http://epp.eurostat.ec.europa.eu/portal/page/portal/population/introduction>. The technical guidelines for data collection under Art.6 of Regulation 862/2007 – Statistics on residence permits specify under those called grants of permission to stay to third-country nationals for reasons related to remunerated activities, categories for those activities encompass e.g. highly skilled workers, EU Blue Card, Researchers, Seasonal workers and other remunerated activities. The last category could be expended for mode 4 purposes.

Box 11.1

European experience on compiling mode 4

In the Czech Republic foreign individuals must apply to a small business supervision office for a small business licence either in person or in writing using the appropriate form. All new entries and changes are recorded at the "Register Court" and published nationally. This means that flows and stocks of mode 4 could be observed since additionally, the commercial register feeds the business register. Therefore, demographics of the businesses can be derived. ID numbers are valid for legal entities that are registered in the commercial register, foreign individuals and units of foreign individuals. Also the Slovak registers include information on organization which covers: a) Industrial enterprises with number of employees 20 and more, registered in the Companies Register, b) Industrial enterprises with number of employees up to 19 (inclusive), registered in the Companies Register, c) Physical persons (private individuals) acting on the basis of small business authorization according to Act No. 455/199. This means that accordingly, mode 4 self-employed persons could be derived from the registers, since they are obliged to register their activity at the Court. Once the registration is done, according to their economic activity the Court assigned the appropriate indication of the activity for further steps and procedures e.g. hair dresser are assigned to another department or institutional unit than e.g. engineers and different rules apply for different professions. This information is submitted directly to the Business Register maintained by the Statistical Office. Accordingly, information on industry activity, size class, number of employees, type of ownership is included in the submitted information. For business services the relevant number of mode 4 self-employed persons could be defined since the relevant size class zero employees and 1 employee are recorded.

In those countries where the compilers have a direct access to the business register or can link their own BoP register with the business register, the self-employed category is accessible. For example, in the EU, very small enterprises should be included in the business registers. The European BR regulation states that all enterprises carrying on economic activities contributing to the GDP with at least half a person employed shall be included in the registers. For example the Slovak business register encompasses information on all kind of activities. Business register attributes such as residence, subject of enterprise, legal type and related characteristics, birth/death of organization, size categories, sector categories, and type of activity/passivity are classified by code lists¹. These code lists are very broad and include a number of variables relevant for mode 4. Therefore, it is recommended that this legal type (Physical persons (private individuals) acting on the basis of small business authorization) and size class (micro enterprises) could be preferably used as a first indication on mode 4 number of self-employed persons'.

Chapter 7 of the business register manual stipulates which legal units must be recorded in business registers. Namely, relevant information for mode of supply is available under 8D – external sourcing of ancillary services and 8E – Activities of workers under exclusive contracts. There are many activities that involve the services of workers under exclusive contracts: "Commercial representatives, travelling salesmen, insurance agents. Such workers may or may not be treated as employees of the enterprise, depending on the nature of the contract binding them to the enterprise"¹. Therefore, it is recommended to incorporate this information in the register and to extract further information on mode 4 persons. The paragraph also indicates the status of the person as an employee, or self-employed.

entry/departure cards in order to obtain more details on the characteristics of the persons travelling under modes 2 and 4.

D.1.a. Country experience: China - compilation of mode 4 person numbers

11.44 China has worked towards compilation of mode 4 person numbers in recent years. Data on outflow and stock of mode 4 persons by the type of contracts is almost completely compiled through direct data collection.

11.45 According to the Foreign Trade Law of China, qualified enterprises, who should apply and get approval for the right of trade in services supplied through presence of natural

persons, could sign contracts of service transactions. The relevant authority is not only responsible for applications of enterprises or service suppliers, but also participates in the collection and aggregation of data on outflow and stock of mode 4 persons in the category of contractual services. A statistical institution has been jointly established by the Ministry of Commerce and the National Bureau of Statistics in China. According to this institution, relevant enterprises are obligated to report on time required information, such as service project, outflow and stock of persons, occupation or overseas work, length of stay, destination of country, etc. Administrative sectors at all levels collect data. The national authority is responsible for aggregation and annual publishing of the data in Chinese Statistics of Trade in Services, as shown in table 11.10 below.

Table 11.10
Outflow and Stock of Mode 4 Persons in 2011 (Contractual Services) in China
 Unit: person

<i>Indicator</i> <i>Country (region)</i>	<i>Total</i>		<i>Contractual Projects</i>		<i>Labour Contracts</i>	
	<i>Outflow</i>	<i>Stock</i>	<i>Outflow</i>	<i>Stock</i>	<i>Outflow</i>	<i>Stock</i>
Total Number	452224	812427	243159	324018	209065	488409
<i>Angola</i>	<i>24528</i>	<i>41693</i>	<i>19954</i>	<i>33159</i>	<i>4574</i>	<i>8534</i>
<i>Russia</i>	<i>15892</i>	<i>20760</i>	<i>2991</i>	<i>3233</i>	<i>12901</i>	<i>17527</i>
...						

Note: Stock means total number of presence of persons, sent overseas by service contracts concerning either project or employment, by the End of the Year.

11.46 Sometimes basic information, such as occupation, purpose of visit, visit destination, etc., is being compiled separately by different authorities (such as immigration, tourism or labour), each with their own statistical purpose and measurement scope, resulting in statistics that do not always match the requirements for measuring the number of mode 4 persons. As a result, it is difficult to extract useful information from the existing statistical systems. For instance, occupations may be classified by first category (i.e. manager, technician, professional etc.), and it may be impossible to further break this down by industry details. One possible solution to this problem is for compilers to cooperate more closely with the relevant sectors and ask for additional useful information. Alternatively, statistical systems of other authorities than the compiling authority could be redesigned in order to meet the data needs for compiling number of mode 4 persons. Another solution is that compilers can establish a new and specific statistical system for the compilation of the number of mode 4 persons. Both of these solutions require close cooperation among the different agencies involved (e.g., immigration, labour, tourism and other sectors). Redesigning the existing system requires more communication and understanding, and increases daily workload for the agencies involved. Establishment of new system may improve the coverage and accuracy of the data, but requires a large capital input, more coordination, and could raise the risk of leaking personal and business information.

11.47 In reality, different circumstances in each WTO member determine locally shaped forms of trade in services through presence of natural persons. Methodological approach of compilation refers, not only to market specifics, but also to national regulations on immigration and labour, policies of foreign investment and trade in services supply through presence of natural persons, as well as the effectiveness of the regulations and policies. Therefore, each economy should identify the statistical institution responsible for compilation of number of mode 4 persons, depending on its own circumstances. Compilers should consider simplifying issues in order to determine the key categories of available data and must cooperate with other major authorities and institutions involved.

D.2. Population censuses

11.48 Population censuses (see also chapter 7) could also be used to gather information that are of interest for benchmarking purposes on the number of persons moving temporarily abroad under a mode 4 regime as well as a to obtain a sense of medium to long-term developments. Questions in a population census could also be used to get a sense of the importance of mode 4, and then have more specific modules, or specially targeted surveys to collect more precise and detailed information. However those concerned with obtaining mode 4 relevant statistics should be aware that modifying a census may be difficult, because of the limited number of questions that can be included. An additional difficulty is that an increasing number of countries are moving from traditional questionnaire based to register based censuses.

11.49 Those countries already having fairly detailed censuses, with a specific module on employment at home and abroad, could envisage adding several questions to gather some additional information relevant for mode 4.

11.50 Censuses which include such employment modules already cover the questions of status in employment, the occupation of individuals and the activity of the business that employs them. To identify more specifically persons who went temporarily abroad in the context of mode 4 one could add the following questions:

Did you travel abroad for work in the past [x]²⁰⁵ months?
If Yes, for what purposes?

- fulfil a contract
- negotiate a contract or establishment of affiliate

To avoid any confusion with non-mode 4 work related movements, questions and response alternatives are needed to identify the country of residence of the employer at the time.²⁰⁶

11.51. *Country experiences.* For example, the Canadian census questionnaire²⁰⁷ identifies if the person is a self-employed or an employee, his/her occupation, the industry of the firm, and if this person was generally working in or outside Canada during the previous week. However it does not include a question as suggested above. Some countries which often have part of their population travelling abroad for work purposes, may be interested in knowing more on the purpose of such travel to determine whether they are mode 4 relevant, When information is collected on the duration of residence, information could also be gathered to find out if the employer is a multinational or not, or if the person is in the country for mode 4 relevant (i.e. with employer base in country of origin) purposes or not.

D.3. Border surveys

11.52. Border surveys (see also chapter 7) should be used for collecting further information (or details) if there was already initial information obtained from

²⁰⁵ Number of months to be determined by the frequency of and period covered by the census.

²⁰⁶ See Box v.2 of MSITS 2010.

²⁰⁷ <http://unstats.un.org/unsd/demographic/sources/census/quest/CAN2006enL.pdf>.

administrative records on mode 2 and 4 trips and/or persons. The relevant questions in existing questionnaires should relate to travel for business or professional purposes. Information on flows (and stocks) of mode 2 and 4 could be obtained by adding supplementary detail to the existing border surveys/passenger surveys questionnaires.²⁰⁸ However, it is important to note that the information collected in such sources will most likely relate to number of trips rather than number of persons. When it comes to mode 2, the latter would be the preferred option, whereas for mode 4 there would be an interest in both.

11.53. Note that the number of trips could also be effectively be used as an input in a model to obtain estimates on the value of mode 4 transactions or obtain data on or the number of persons. Alternatively, to obtain actual information on the number of persons moving under mode 4 regimes using such a source, one would need to identify if the respondent entered/left the country in the reference period, and if so determine the number of trips he/she has done for work purposes and their total duration.

11.54. It should be noted, however, that if the flows of certain categories of travellers are small (and this might happen for some detailed categories of service suppliers) it would possibly require a larger (and more costly) sample or a more targeted one than when fewer categories are considered, in order to obtain sufficient information.

11.55. IRTS 2008 already suggest the collection of information that would be very useful for approaching the number of mode 4 trips/persons. Recommended elements include a breakdown of purpose of stay into personal and business and professional activities. Among the professional activities, self-employed are explicitly mentioned as well as other types of persons travelling for professional reasons (businessmen, investors). Information on attendance of meeting, conferences or congresses, trade fairs and exhibitions is also recommended²⁰⁹. The SITS compilers should further consult the forthcoming IRTS 2008 Compilers Guide and closely cooperate with the compilers of tourism statistics in order make the most effective use of the information collected by tourism statisticians.

11.56. A starting point for identifying mode 4 would be to identify people travelling internationally for business or professional purposes. As previously described such information could potentially be available from arrival and departure card data which could be used for a first stratification/selection for identifying business travellers (also see chapter 9). However, not all of the people in this group will represent mode 4. For example, people travelling overseas to receive a service (like attending a conference or

²⁰⁸ If available, using the number of "mode 4" visas issued, where those exist, would be a very good starting point. However it would be necessary to identify how these fit to the definitions identified in MSITS 2010.

²⁰⁹ The scope of this business and professional category is described in paragraph 3.17 of IRTS 2008: "Business and professional. This category includes the activities of the self-employed and employees as long as they do not correspond to an implicit or explicit employer-employee relationship with a resident producer in the country or place visited, those of investors, businessmen, etc. It also includes, for example, attending meetings, conferences or congresses, trade fairs and exhibitions; giving lectures, concerts, shows and plays; promoting, purchasing, selling or buying goods or services on behalf of non-resident producers (of the country or place visited); participating in foreign Government missions as diplomatic, military or international organization personnel, except when stationed on duty in the country visited; participating in non-governmental organization missions; participating in scientific or academic research; programming tourism travel, contracting accommodation and transport services, working as guides or other tourism professionals for non-resident agencies (of the country or place visited); participating in professional sports activities; attending formal or informal on-the-job training courses; being part of crews on a private mode of transport (corporate jet, yacht, etc.), etc.

workshop) are also likely to select business or professional as their purpose of travel in an arrival or departure card unless these cards include a separate option for this category.

11.57. Some small modifications can be included in existing surveys to capture mode 4 movements of natural persons. Adding such questions to border surveys will require close cooperation between those in charge of tourism and trade in services statistics. The questions suggested in IRTS 2008 on the purpose of the business trip could, for example, be extended as shown below. This would allow the differentiation between persons attending meetings, conferences, trade fairs and exhibitions and those who are of interest for mode 4. The suggestions below are built from the perspective of incoming visits. (Also see chapter 7 for more suggestions.)

11.58. If business or professional visit/trip

Are you here for...

...Attending meetings, conferences, trade fairs and exhibitions

...Other business and professional purposes

11.59. The next question in order to identify mode 4, combined with the information on the length of stay, could then be formulated in different ways. Two options are given below. The first option is to ask as in the case of the UK questionnaire (see below) if the person is employed from abroad (i.e. outside the economy visited) or self-employed in which cases the person is potentially a contractual service supplier (highlighted in bold case in the suggestion below):

Are you employed...

...from domestic economy

*... **from abroad***

*...**or are you self employed***

11.60. It could be useful to list some service occupations categories that are important for the compiling economy.

11.61. A second option would be to set directly more focus on the mode 4 supply of service types of persons as defined in chapter V of MSITS 2010. The questions could then be phrased as follows:

Are you here...

...to deliver/supply a service?

...as a self-employed contractual service supplier

...as a contractual service supplier - employee sent by your employer

(alternative: Did your employer send you abroad?)

Are you coming to work in an affiliate of your employing company?

...as a services sales person?

... to negotiate the establishment of a (services) affiliate?

11.62. It is important that these questions are formulated to be understandable by respondents, and it would be also important to develop appropriate explanatory notes. Similar questions could be developed from the perspective of outgoing visits.

11.63. It would be very useful to ask for the occupation of the person, possibly presenting a short list of occupations that is important for the compiling economy. For example, specific information could be sought for those supplying maintenance and repair services as this is a category of particular interest for many economies. Alternatively a choice of activities of the service supplier (i.e. the employer) could be proposed. The question could be as follows

If you are employed from abroad by a service company providing services to a local client (individual or company), specify the service activity of your employer:

Agriculture, forestry and fishing

Mining and quarrying

Water supply; sewerage; waste management activities

Construction

Information and communication etc.

The activities of the employer (preferably consistent with ISIC) could also be listed in the notes attached to the questionnaire, but this would be considered as a second best solution.

11.64. It should be stressed that some persons moving internationally under mode 4 (especially intra-corporate transferees) will be staying abroad for longer than 12 months, so could be excluded from (tourism/travel) border surveys if respondents are told not to respond if this is the case. However, it would be a good practice to adopt an integrated approach – to design and conduct the border survey to collect also information on all respondents, and then the compiler would select the information that is needed for different statistical domain (e.g., for tourism statistics only select those travellers with trips of less than 12 months, while for SITS travellers with trips of any lengths will be of interest.)

11.65. In addition compilers need to take into consideration the national treatment with regards the duration determining whether or not an international traveller will be required to register as resident rather than be regarded as a visitor. This may also imply to adapt the data collection method.

11.66. It is also important to note that although some estimates for mode 4 could be derived from border/passenger surveys, in particular by better exploiting the existing data collection, this may only be done with a larger degree of approximation. As indicated above it may be done with no or little additional cost in the collection system. The UNSD website provides information on the existing border surveys and the compilers are advised to familiarise themselves with the questions relevant for mode 4.

11.67. To summarize on mode 4 and travel/tourism border surveys, some limited changes in the existing questionnaires could be sufficient to obtain further information on the number of trips of interest for policy making. In general, it is a good practice when the SITS compilers work closely with the designers of such questionnaires in order to add some questions to more specifically target mode 4 information needs: residence and occupational status of the traveller, residence of the employer, identification of intra-firm transferee and services sellers setting up commercial presence.

11.68. At least in some countries this may involve certain challenges, such as the size of the sample which may need to be enlarged to ensure the representativeness of small sets of

the population, the interview duration (and consequently the survey total cost) may increase, the survey form may become more complex or lengthy, and last but not least, one must not forget that border survey managers are already pressed by other users, in particular the tourism sector users, who are willing to expand the questionnaire for tourism-related aspects. This is why it is important that there is a strong co-operation between the (potential) users (i.e. tourism, balance of payments, trade in services, etc.) of such data to identify the synergies and priorities according to the specific information needs of the economy.

D.3.a. Country experience: Spain - border survey of travellers

11.69. Tourism statistics in borders that include not only a mere accounting travellers but also tourism expenditure of these are ideal to cover most of the Mode 2. Also, these surveys would be the optimal boundaries for the complete measurement of Mode 4, to be able to identify international travellers because of business whose primary goal is the international provision, either in the name of your company or on your own, or the establishment of commercial presence or commercial negotiation, etc. At present, the INE is under transfer absorption tourism surveys borders and homes so far by the Institute of Tourism Studies (IET). However, to date, not a business traveller asks for the type of business or commercial activity, much less if it is a rendering or receiving of services and the type of service.

D.4. Labour force surveys

11.70. MSITS 2010 sees the use labour-force surveys as another possible source of information on mode 4²¹⁰. A limited number of questions on (recent) visits abroad by household members for the purpose of work could be added, including questions about the contracting parties, the duration and forms of payment. Such questions would also enable the identification of Mode 4 types of visits separately from that of international labour mobility.

11.71. Although this option may have its merits, the precision of the resulting estimates, may represent a limitation to their usefulness because the sampling may be not adequate with respect to the population of interest.²¹¹ Labour force surveys are widespread and reasonably standardized. This possibility may be mainly relevant for sending countries for mode 4 which cover, as noted earlier, contractual services supplier and those travelling for negotiating purposes. In the case of intra-corporate movements as well as migration of self-employed persons, such an option could be relevant for receiving countries as well, but with a different set of questions. However for those countries/regions where mode 4 is potentially important and/or the population is relatively well covered by the sample, it may prove useful to add appropriate questions in the surveys such as proposed in chapter 7. These questions should be designed to make possible the identification of mode 4 types of movements separately from international labour migration. A specific module could also be developed as proposed in the same line as the one proposed by ILO for labour migration (also see chapter 7).

11.72. However, it is recognised that such an approach cannot be generally adopted without a thorough analysis of the importance of the different mode 4 categories for a country. Some are more concerned with the fact that their workers are temporarily sent abroad to fulfil services contracts, whereas others are more in the position of receiving

²¹⁰ MSITS 2010, paragraph 5.117.

²¹¹ See for example, Hoffmann (2010) on the UNSD website.

many migrating self-employed persons, or intra-corporate movements of personnel (i.e. incoming) who operate from a base in the host economy (as per a relevant Mode 3 commitment) and are thus not mode 4 persons. In addition, this may be limited to a specific region within a country; and such an additional module may then only be envisaged for respondents of that particular region.

11.73. The European Labour Force Survey (ELFS) programme is an obvious example of the (so far unexploited) possible use and benefits of this strategy, given that all member countries of the European Union and EFTA have (reasonably well) coordinated LFSs, and report results to Eurostat. The same possibility and potential benefits should also exist for the North America Free Trade Association (NAFTA) member countries, as well as for other countries with an LFS that would be willing to cooperate on producing such statistics for mutual benefit.

11.74. *Related surveys.* An additional illustration of the possibility offered by these sources is the European Working Conditions Survey²¹² which provides an overview of working conditions in Europe using different indicators for working conditions of both employees and the self-employed. The employment status, which is included in this survey, as well as demographic indicators, once combined, have the potential to compile mode 4 information. The SITS compilers are advised to review the IMF publication *International Transactions in Remittances: Guide for Compilers and Users* which suggests that household surveys could be used to collect information relevant to mode 4 by including a number of specialized modules or questions in existing surveys, or that specialized surveys could be conducted through which relevant households would be identified. This would help analysts understand the relations among the supply of services, employment status, etc.

D.5. *Household surveys on business travel*

11.75. *Household surveys on business travel.* Some compilers may use some household surveys to collect specifically information on outbound business travel. Such a source focuses on a specifically targeted set of the population, i.e. those travelling for business reasons, and may serve multiple needs such as for national accounts, balance of payments, trade in services. As it is targeted survey, some specifically tailored questions could be included to help the compiler gather some information that may be of interest for mode 4. Of course, as for other compilation described in this chapter, considering confidentiality issues and the sample size, mode 4 data could be presented or aggregated to broad economic or geographical categories, with possibly more details to those categories of specific interest to the compiling economy. (See UNSD website for country experiences in this regard.)

D.6. *Enterprise surveys and business statistics*

11.76. *Enterprise surveys* can be the source for mode 4 if enterprises have a record of the type product, and the parties involved, information on own or supplier's staff. Actually firms normally keep staff records (which may not necessarily be recorded in the same department as the one dealing with reporting data on transaction, i.e. personnel versus accountancy departments), which may include information on the type of work performed and/or whether the staff member has received special compensation for working abroad. Such information could serve the needs for information on mode 4. Within enterprise

²¹² Source: <http://www.eurofound.europa.eu/surveys/ewcs/index.htm>.

surveys, and if deemed relevant, one could also consider including explicitly mode 4-related questions along the lines proposed in the trade in services surveys above, or other questions designed to identify mode 4 activities.

11.77. *EU experience.* For example, within the Eurostat Service Trade by Enterprise Characteristics (STEC) project, which aims to provide services by enterprise characteristics, rough estimates could be made for the category of self-employed persons in the size-classes. This could be possible since some countries also collect information on Small and Medium sized enterprises (SMEs) in their samples. Though this information could be confidential depending on the size of the company and the number of traders, first estimates identifying the industries where cross-border trade is taking place, are feasible, since the project aims at linking enterprises active in international trade in services with the business register and the self-employed are to be included in the scope of this exercise.

11.78. Rough estimates on mode 4 number of persons could therefore be derived also from statistics compiled for entrepreneurship though the empirical basis for this work is still being developed. Size-class variables within the structural business statistics are the main basis for statistics to analyse the activities of small and medium sized enterprises, including micro-enterprises. Business demography statistics include the active population of enterprises. The European Commission communication on qualifications for an enterprise to be considered as an SME specifies thresholds regarding the annual turnover and balance sheet for an enterprise to qualify as micro-enterprises (which was previously not defined). Note that this information would enable statistics producers to obtain easily the data needed to estimate the value of services provided through mode 4, additionally to mode 4 numbers of persons.

11.79. Service sectors are defined in standard industrial classifications as NACE (Statistical Classification of Economic Activities in the European Union) Revision 2 sections H- S.

11.80. Though NACE is not used in the Balance of Payments statistics, nevertheless the same linkages could be done through common registers, in particular through linking services to Business registers as in the case of STEC. Therefore, it is recommended that compilers focus in a first stage on those categories relevant for their respective compiling economy. Already several analyses on firm-level data haven been conducted on a NACE-EBOPS basis²¹³. Currently, the analyses are focusing on the activity sector, which means that they are conducted in regards to the sectors performing services exports/imports. In the GATS relevance/mode 4, focus should concentrate on whom is exporting/importing services and how.

11.81. *Building a bridge between ISIC-CPC-EBOPS.* Building a bridge between ISIC-CPC-EBOPS and considering the nature of services (e.g. legal services are provided only in one or two specific industry categories) it could be assumed taking into consideration the structure of an economy in the compiling country that some services are provided from

²¹³ P. Walter, R. Dell'mour (2010): Firm Level Analysis of International Trade in Services, Irving Fisher Committee (IFC) on Central Bank Statistics WP 4, Bank for International Settlements Analysis on the performance of German exporters in the business services sector (consisting of advertising, engineering, commercial and computer services NACE Rev. 1, Vogel A. (2009): *Exporter Performance in the German Business Services Sector: First Evidence from the services Statistics Panel*. University of Lüneburg, WP Series in Economics 111.

micro-enterprises or small or medium size enterprises, rather than larger ones. The number of persons (mode 4) involved in cross-border activities in these specific services sectors could therefore be narrowed down.²¹⁴ This undertaking would need linkage exercises of statistics, and also the assumptions that business services consist mostly or fully of services (i.e. the secondary activity of producing goods is negligible). It is recommended that statistics producers cooperate with business associations/organizations to get a better understanding of the characteristics of the services under consideration.

11.82. Within enterprise surveys, and if deemed relevant, one could also consider including explicitly mode 4 related questions along the lines proposed in the trade in services surveys above, or other questions designed to identify mode 4 activities.

11.83. It may be that one-man-companies, or micro-enterprises, are trading internationally specific types of services as mentioned above. On this basis it could be expected that to provide the relevant statistics for such services (depending also on structure of the economy in the compiling economy) may be (partly) provided by the statistics for the relevant sector (ISIC industry).

D.7. Trade in services surveys

11.84. If designed with care, export trade in services surveys would most probably be an excellent source to collect information on mode 4 movements for contractual service suppliers which are employed by the sending company. It is possible that the survey could cover intra-corporate movements as a case of providing a service to the affiliate company. The example below presents a survey of exported services.

D.7.a. Country experience: New Zealand - Census of International Trade in Services and Royalties²¹⁵

11.85. Where the respondent didn't specify a mode of supply in their returned questionnaire we either imputed the most likely mode of supply based on Table 5.2 in MSITS 2010 (for lower value answers) or called the respondent for clarification (for higher value answers). Respondents were always able to provide mode of supply information when contacted directly.

11.86. Census results were compared with a list of assumptions provided by MFAT prior to running the survey. These assumptions had been put together based on trade negotiator experience combined with Table 5.2 in MSITS 2010. Results from the Census were similar to MFAT's assumptions across nearly all service types. This indicates, in New Zealand's case at least, that information from trade negotiators can be just as useful as modes of supply indicators from a survey.

D.7.b. Country experience: Spain - Survey of International Trade in Services (ECIS)²¹⁶

²¹⁴ CPA product categories are related to activities as defined by the Statistical classification of economic activities in the European Community (NACE). Each CPA product - whether a transportable or non-transportable good or a service - is assigned to one single NACE activity. This linkage to NACE activities gives the CPA a structure parallel to that of NACE at all levels.

²¹⁵ Further information about the census can be found in Chapter 6 (para. 6.81 – 6.94).

²¹⁶ Further information about the survey can be found in Chapter 6 (paragraphs 6395 – 6.102).

11.87. The Spanish Statistical Office (INE) has been aware that the introduction of the service delivery mode in the Survey of International Trade in Services (ECIS) is limited in scope as only partially covers some modes. In particular, being the ECIS a survey designed to balance of payments, leaving most of the Mode 3 (commercial presence) without cover. Also, focusing only on the "Other" (non-tourism services) leaves most of the Mode 2 (consumption abroad) also uncovered. The ECIS cover any part Mode 1 and Mode 4, as it is a survey that targets businesses (and other entities resident) rather than individuals. However, it is a first step approach to the measurement of mode as both Mode 3 and Mode 2 can also occur, albeit residual, and modes of supply of certain services traded between residents and non-residents included in the new EBOPS 2010.

11.88. The INE also produces annual statistics on foreign affiliates both "inward FATS" and "outward FATS" that are ideal for measuring Mode 3. However, the turnover of foreign affiliates generated in the country in which they are located is not broken down by product type, and therefore much less by type of service according to EBOPS 2010, which is used in the ECIS. Therefore, at present, cannot do an integration of international trade data for Mode 3 services from the ECIS and FATS statistics.

D.8. Surveys of international investment

11.89. Surveys of international investment can also be a valuable source for information on employees recruited from overseas and intra-corporate transferees for compilation of mode 4 statistics. For example, questions such as 'how many employees did you recruit directly from overseas?' and 'how many of your employees are intra-corporate transferees from abroad?' can be added to international investment surveys, or can be added as part of any inward FATS studies. Similar information on intra-corporate transferees could also be collected for outward FATS, although the completeness and relevance of the information may be more difficult to achieve.

D.9. Other sources

11.90. *Use of "mirror" data.* Exchange of statistics between countries (i.e. main partners) is seen as particularly relevant. "Sending" (i.e. exporting) countries may have more easily information for some categories (in particular contractual-service suppliers and those travelling for negotiation purposes) than for others (e.g. intra-corporate movements, self-employed migrants). The "receiving" (i.e. importing) countries may have such information as well.²¹⁷ In this connection it should be noted that due to differences in applied concepts and data collection/compilation procedures such "mirror" data should be used with caution and after necessary reconciliation.

E. Country experiences

E.1. Country experience: Canada

11.91. For the majority of the SITS, apart from travel and transport services, Canada uses a specific survey on trade in services and several industry-oriented surveys. These enterprise/establishment surveys are supplemented by administrative data recording non arm's length transactions with non-residents.

²¹⁷ On potential sources by category of mode 4, and by direction of movement (ingoing/outgoing) is provided in table 16.2.

11.92. Each source has its own coverage and its own collection of service statistics which are not necessarily equivalent to EBOPS. However, as resources are limited and as the reduction of response burden is an important objective for the Canadian compilers, there is a necessity to use several sources to produce the best estimates as possible.

11.93. The administrative data provide, in principle, a better coverage than surveys as all Canadian legal entities are required to fill the tax form if their total transactions (not only in services) between them and all their foreign related entities are above C\$1 million. For example, for the year 2010, more than 12,000 entities have filled that tax form and half of them have reported service transactions. The tax form supplies transactions by name and country of the non-resident entities.

11.94. However, this tax form is limited to transactions with foreign related parties. That limitation virtually eliminates our capacity to use this administrative information as a “data-replacement” source. In other words, the administrative data could not completely replace survey data. Furthermore, several service categories are aggregated on the form to simplify the work of the respondents. Very few definitions come with the tax form which may lead to errors or misinterpretations by the respondents.

11.95. The files provide with annual administrative data are updated twice a year. As it is an outside source, there could be less quality-controlled about the information provided. For example, if there is no transaction reported for a certain entity, it could be because there is really no transaction or because the information has not been processed yet. The main purpose of this tax form is not to monitor transactions in services. Thus, verifications by tax authorities are usually done at a more aggregated level so transactions for the same unit could be reported under one activity in one year and under another activity the following year without further verification.

11.96. Industry-oriented surveys are surveys collecting different information on revenues and expenses by enterprises/establishments for specific industries. These industry surveys are part of the Unified Enterprise Survey program (an integrated questionnaire that could be applied to more than 30 surveys). Annually, around fifteen industry surveys include a module on international trade. These surveys cover more than 20,000 different Canadian enterprises with one-third reporting trade in services.

11.97. These surveys offer a very broad coverage of the service industries which is an advantage. However, because a large proportion of units surveyed do not report trade in services, the module on international trade added to the questionnaire is relatively short and do not provide a lot of information. Details on the services trade and on the geographic distribution of the trade are limited. Furthermore, there is no breakdown between trade with related parties and with non-related parties. Those were the compromises made to include a module on international trade to these surveys and have access to a broad coverage of entities. To reduce respond burden, it was agreed that units reporting small or medium transactions of services on the industry surveys will not be surveyed by the specific survey on trade in services.

11.98. Surveys and administrative sources covering a wide range of activities (finance, trade, revenues, expenses, etc.) are not seen as precise as a survey only on trade in services. Information on trade in services requires sometimes deeper research by the respondents than other statistics on revenues, expenses, and investments which are often available for financial

reports. This may lead to less precise responses when filling the questions on trade in services.

11.99. For that reason, and also to get a more complete coverage of the Canadian economy, a specific survey targeting only trade in commercial services (which exclude travel and transport services) is mailed to more than 3,500 Canadian enterprises of different sizes and from different economic sectors.

11.100. This specific survey (International Transactions in Commercial Services – BP21S) is more complete than the other sources in term of categories of services requested. Respondents have to provide transactions in services for 32 different categories of services. Transactions are reported by country of trade as well as with the relation with the trade partners (either related or not). A list of definitions, as well as a guide to help the respondents, is also included with the questionnaire, which should, in principle, improve the quality of responses.

11.101. Enterprises that have reported large transactions in the administrative data and/or in the industry (establishments) surveys are usually also surveyed by the enterprise survey. Having more than one sources reporting transactions for the same entities improves the comparability between the sources.

E.2. Country experience: Japan

11.102. Japan uses ITRS as a primary data source for compiling trade in services. However, as some transactions cannot be captured through ITRS, various data sources have been implemented to supplement ITRS. Other data sources include enterprise surveys for specific business based on the Foreign Exchange and Foreign Trade Act, administrative source, and data provided by private institutions. Uses of data sources other than ITRS for compilation of trade in services are as follows.

11.103. *Transport (sea transport and air transport)*. Data obtained through Japan's ITRS is not sufficient enough to compile transport service. One of the unique features of transport services is that freight costs beyond the customs frontier of the exporter are payable by the importer. For freight credit, revenues of resident carriers related to transporting exported goods should be recorded, but under Japan's ITRS, payments made by resident exporters to resident carrier are not subject to report. For freight debit, freight cost is included in CIF value of imported goods, which is exempted to report under Japan's ITRS.

11.104. Thus Japan has been obtaining data from international transport operators directly through enterprise survey, and use as a primary source data for air and sea transport and related services.

11.105. The survey collects revenues and expenses related to international transport operations directly from international air and sea transport operators on monthly basis. The survey is submitted by all Japanese aviation and shipping operators who run business of international transport operations, and by all branches or agent of foreign aviation and shipping companies on behalf of their head offices. By obtaining data directly from transport operators, air and sea transport and related services are able to be captured comprehensively and properly.

11.106. *Travel*. ITRS can be used to obtain data on means of payment for international travels, but under Japan's ITRS, data obtained are not sufficient to compile travel services. Thus, Japan has been estimating travel services by multiplying per capita expenditures of travellers by number of international travellers.

11.107. For travel credit, both per capita expenditures and number of international travellers are sourced from Japanese government agencies. Per capita expenditures are derived from survey on persons (quarterly border survey) conducted by Japan Tourism Agency. The number of international travellers is administrative source released by Ministry of Justice.

11.108. For travel debit, Bank of Japan purchases data on household surveys for travelling abroad, which are conducted by Japanese private institutions, and estimates per capita expenditures. Number of Japanese travelling abroad is also estimated by combining administrative source and other information provided by Japanese government agencies.

11.109. Expenses for international students, staying in the host economy for more than a year are sourced from researches of Japanese government agencies and administrative sources.

11.110. ITRS is used as a complementary source for travel. Travel expenses that are rarely covered in the survey, such as medical expenses for patients receiving medical care abroad, tuition fees for short term students, and expenses for all-expenses-paid trip, are supplemented by ITRS data.

11.111. *Insurance and pension services, financial services*. Explicit fees charged for financial services are captured directly from survey for major financial institutions, survey on issuance and offering of securities, and ITRS.

11.112. Implicit charges for insurance services and financial services (i.e., margins on buying and selling transactions and FISIM²¹⁸) are derived by combining various data sources. Insurance service is estimated by multiplying insurance premiums obtained through ITRS and survey on freight insurance, by service ratio derived by financial statement of insurance companies.²¹⁹ FISIM and margins on buying and selling transactions are sourced by survey for major financial institutions, ITRS, and market data purchased from private data provider.

11.113. *Other transactions*. The above mentioned surveys are stipulated in the ministerial ordinance, which targeted to a certain business sector. Other than those surveys, the Act and the ministerial ordinance stipulates that the Minister of Finance can order any resident, through written notification, to provide information necessary for compiling BOP and IIP. Some data, that are not obtainable through ITRS or survey stipulated in the ministerial ordinance, are obtained through special survey through written notification. Surveys based on written notification are currently utilized for manufacturing services on physical inputs owned by others (debit) and financial services (credit).

²¹⁸ Margins on buying and selling transactions and FISIM will be newly introduced along with the implementation of BPM6 in Japan.

²¹⁹ This estimation method will also be introduced along with the implementation of BPM6 in Japan.

Table 11.11

Japan's sources of trade in service items

Trade in service item	Source data	
	credit	debit
Transport		
Sea transport	International transportation survey, ITRS	International transportation survey, ITRS, trade statistics, other source
Air transport	International transportation survey, ITRS	International transportation survey, ITRS, trade statistics, other source
Other	ITRS	ITRS
Travel	Survey on persons (border survey), administrative source, ITRS, other sources	Household survey, administrative source, ITRS, other sources
Other services		
Manufacturing services on physical inputs owned by others	ITRS	ITRS, survey ordered by written notification
Maintenance and repair services n.i.e.	ITRS, International transportation survey	ITRS, International transportation survey
Construction	ITRS	ITRS
Insurance and pension services	ITRS, survey on freight insurance, other sources	ITRS, survey on freight insurance, trade statistics, other sources
Financial services	Surveys for major financial institutions, ITRS, survey on issuance and offering of securities, survey ordered by written notification, other sources	Surveys for major financial institutions, ITRS, survey on issuance and offering of securities, other sources
Charges for the use of intellectual property n.i.e.	ITRS	ITRS
Telecommunications, computer, and information services	ITRS	ITRS
Other business services	ITRS	ITRS
Personal, cultural, and recreational services	ITRS	ITRS
Government goods and services n.i.e.	ITRS, administrative source, International transportation survey	ITRS, administrative source, International transportation survey

E.3. Country experience: the Philippines

11.114. The Bangko Sentral ng Pilipinas (BSP) is the lead agency in the compilation of SITS in the Philippines. It adheres to the guidelines stated in the International Monetary Fund's (IMF) BPM5 and the Manual on Statistics of International Trade in Services (MSITS) 2002. The BSP is able to compile all the 11 services accounts, mostly from the bank reports in the International Transactions Reporting System (ITRS), supported by the company responses to the Cross Border Transactions Surveys (CBTS) and administrative reports from other agencies and industry associations. Meanwhile, most of the countries were able to comply by conducting their respective Survey of International Trade in Services (SITS).

11.115. The rising trend towards globalization has rendered the compilation of trade in services more challenging as increased cross-border mobility of capital, people, and other

resources resulted in increased difficulty in measuring and monitoring SITS. Specifically, the main challenge of the BSP in the compilation of SITS is anchored mainly in maximizing the benefits of the ITRS and CBTS. On the one hand, the challenge of the BSP in the use of ITRS, is addressing possible misclassification of transactions by the banks. On the other hand, the BSP is confronted with the challenge of improving the generally low response rate and the coverage of its CBTS to include other industries, to better capture relevant services transactions for SITS compilation. The low response rate of surveys stems from the absence of a specific provision in the charter of the BSP that would allow it to enforce compliance by non-financial corporations to provide data or information.

11.116. For the compilation of SITS based on the recommendations of BPM6, the BSP's major sources of data are still the ITRS and the CBTS. Reports submitted to the BSP by commercial, thrift and foreign banks under the ITRS contain information on bank positions in foreign currency-denominated assets and liabilities and all payments and receipts which bring about changes in the banks' position. This information is being utilized in the compilation of some of the services sub-accounts such as transport, travel, construction, insurance and pension, financial (including FISIM), charges for the use of intellectual property, n.i.e., telecommunications, computer, and information services, other business services, personal, cultural and recreational services. Aside from BOP compilation, the ITRS is also being used by the BSP in monitoring the international reserve position of commercial banks and in the prudential supervision and monitoring of compliance with foreign exchange regulations.

11.117. The CBTS, which are conducted on a monthly basis, covering top companies (large businesses) only, are implemented primarily to collect information that do not pass through the banking system. This is designed to supplement bank reports on selected sectors such as transport (passenger), travel, communication, construction, financial services, computer and information services, and other business services.

11.118. Aside from the CBTS, the BSP in coordination with the Department of Trade and Industry (DTI) is also conducting the annual Information Technology-Business Process Outsourcing (IT-BPO) Services Survey that covers companies engaged in Business Process Outsourcing (BPO) activities.

11.119. The BSP also utilizes administrative-based data provided by regulatory and administrative government agencies to compile some of the services sub-accounts. Receipts on manufacturing services on the physical inputs owned by others are derived using data on the FOB value of consigned exports and imported raw materials, which are largely for the manufacture of semiconductors and garments, among others. These data on consigned exports and imports are sourced from the Foreign Trade Statistics (FTS) being generated by the National Statistics Office (NSO). The value of the reported raw materials is at times adjusted to correct for inconsistency with corresponding exports. The FOB value of exported goods from the FTS is also used to estimate freight exports by applying a parameter. Meanwhile, freight imports are computed using the average ratio of total freight to total imports for the period and the terms of delivery used. The FTS also provides information for insurance services.

11.120. For the compilation of the other components of transport services, ITRS and Civil Aeronautics Board (CAB) data are being used. Data on air transport, particularly on passenger and operational lease, are sourced from the administrative reports of the CAB. Data on insurance and pension services are sourced from the records of the Insurance

Commission. The reports of the Credit Cards Association of the Philippines are the main source of information for payments of credit card transactions of residents for goods and services consumed abroad that will be recorded as part of payments under travel.

11.121. For travel receipts, the Visitors Sample Survey (VSS) conducted by the Department of Tourism (DOT), which provides information on the average expenditure of foreign tourists and their average length of stay in the Philippines, is utilized. For tourist-related travel expenditures abroad by residents, data are sourced from the ITRS and CBTS. Beginning with the 1999 report, travel receipts include non-resident overseas Filipinos (OF) expenditures in the Philippines during home visits. Travel debits cover expenditures of resident OFs in the host countries where they are deployed. The Department of Foreign Affairs (DFA) data on annual budget of Philippine embassies/consular offices abroad are used as proxy for payments on government services.

E.4. Country experience: Brazil

11.122. The Ministry of Development, Industry and Foreign Trade of Brazil, through its Secretariat of Commerce and Services, since 2005, compiles statistics on trade in services based primarily on “exchange contracts” from the Central Bank’s Balance of Payments, which follows the IMF’s BOP guidelines. These are specific contracts that the seller and the buyer of foreign currencies in Brazil must sign in which the characteristics and conditions concerning the operation are defined. These operations must be registered in the Central Bank System of Information (Sisbacen) by the financial institution authorized to operate in the exchange market – each operation receives a specific code according to its nature.

11.123. The data on exchange contracts allow for the analysis of the Brazil’s detailed services accounts, and also provides figures on revenues and expenditures in services transactions by region, federal unit, branch of economic activity and country of acquisition/sale. The latter type of analysis, however, does not include transactions involving travel, transportation and government expenditures. Transactions regarding travel (or provision of services to natural persons while abroad) are rarely recorded in an exchange contract, while the transportation service is often included in the bill of the good or merchandized being transported.

11.124. Despite the many improvements over the years in these methods of compiling trade in services statistics (the registration of the exchange contracts for instance is now largely an online process), several constraints remain in the way of creating a sound statistical database for trade in services. For instance, current sources provide only limited data for the assessment of other modes of supply like commercial presence or presence of natural persons. Also, they have trouble accounting for the transactions in which exporters hold accounts with nonresident banks and use the revenues for specific purposes determined by the Brazilian law.

11.125. Besides, not all transactions related to foreign trade (export/import) are registered specifically in the Services Account of the BOP. A concrete example refers to what is possibly the most competitive exporting service sector in Brazil: that of construction services, which have their foreign operations usually funded by financing mechanisms and are thus recorded in another account of the BOP, other than the Services Account.

11.126. More fundamental still, there hasn’t been a unique service classification system that would allow compiling agencies in Brazil to define trade in services following a national set

of pre-determined definitions. Because many services are categorized through abstract concepts rather than by any physical attribute (unlike trade in goods), different ways of defining them abound among agencies. To further complicate matters, the definitions are also dependent on reaching a common understanding of concepts with data providers.

11.127. In order to bridge at least part of this gap of information, the Secretariat of Commerce and Services, has increasingly focused its attention on collecting and improving statistics on foreign trade in services. With the aim of addressing the demands for more relevant, detailed and internationally comparable statistics on services trade, two main initiatives have been simultaneously pursued by the SCS: a classifying system and a registration system devoted to all international transactions involving services and intangibles, both of which aligned to the concepts and framework of the General Agreement of Trade in Services.

11.128. The NBS – Brazilian Nomenclature of Services and Intangibles – and its respective explanatory notes (NEBS), is the national classifier to identify the services and intangibles as products and enables the proper preparation, monitoring and evaluation of public policies in an integrated way. Aiming sector competitiveness, promotes the harmonization of activities focused on fostering entrepreneurial, taxation, public purchase, foreign trade, among others. The NBS is based on the Central Products Classification (CPC) of the United Nations.

11.129. The NBS and NEBS were established by the presidential decree n° 7.708/2012. NBS and NEBS are jointly managed by the Ministry of Development, Industry and Foreign Trade and the Ministry of Finance were developed since 2008 by a working group that included the Central Bank of Brazil and the Brazilian Institute of Geography and Statistics. The NBS is currently undergoing a review, which include consultation with private and public sector entities involved in the services economy. The process of adjustments aims to reflect Brazilian reality in the services sector, maintaining CPC as a reference. 11.10 Siscoserv – the Integrated System for Foreign Trade in Services and Intangibles - is a tool developed by the Federal Government for the improvement of stimulus actions, formulation, monitoring and assessment of public policies related to services and intangibles as well as orienting business strategies for companies in the international market.

11.130. Siscoserv provides data on transactions between residents and non-residents involving the provision of services (such as construction, engineering or consultancy services) and intangibles (licensing of property rights, for instance). This system complies with the General Agreement on Trade in Services (GATS) so that the sales and purchases of services registered in the system are those comprising foreign trade in services as defined by the GATS, including its classification in the four Modes of Supply.

11.131. The system has two modules: one for sales and one for acquisitions. The Sales Module records services and intangibles sold by Brazilian residents to non-residents. The information recorded by the user in the module includes the transaction data (value, start date of service, date of completion of service, code of NBS, the transaction currency and delivery mode) and the foreign service acquirer data (name, address and country).

11.132. The Acquisition Module records services and intangibles acquired by Brazilian residents from non-residents. The information recorded by the user in this module includes the transaction data (value, start date of service, date of completion of service, code of NBS, the transaction currency and delivery mode) and vendor data (name, address and country).

11.133. The data collection system implies mandatory registration by users. In order not to burden these users, some simplifications were necessary. The record obligation was waived for individuals residing in the country that do not exploit regularly any economic activity, as long as they do not carry out transactions exceeding U.S. \$ 20,000.00 per month. The obligation is also waived for small businesses, as defined by Brazilian legislation.

11.134. Nevertheless, Siscoserv is much more complete than data extracted by the EBOPS (Extended Balance of Payments Methodology) of the Manual of Statistics of the International Trade in Services, since it covers the entirety of CPC 2.0 and not just the CPCs relevant to Document W.120 of the WTO. Soon this will allow international comparability with countries that already can produce EBOPS.

11.135. The Siscoserv was implemented in August 2012 and the record of the chapters of the NBS is gradually being implemented, along the 27 chapters of the NBS. Thus, the data will only be available in its entirety as of April 2014. Besides, Siscoserv will also produce statistics related to the Brazilian Commercial Presence Abroad (Outward FATS) and the registry will be due until June 2014, in relation to the 2013 data.

11.136. When data are available, there will be greater opportunities for the public and the private sectors to act in the services economy. By using NBS as the classification of services in the registry, the data are more disaggregated, i.e. there will be a better identification of services in 855 codes and actions in this sector will be more focused and efficient. In addition, there will be greater ease in international negotiations since the NBS is harmonized with the CPC (the UN's Central Products Classification). In this sense the system provides reports which correlate the NBS with CPC versions Provisional and 2.0.

11.137. We also stress the ease in conducting public policies, both to identify the sectors with the greatest needs and for subsequently measuring the results of this public policy and thus promoting improvements in the same. Finally, the current system also helps the overview of the operations of every service sector, shedding light in the different business models and consequently more comprehension for better suited governmental action. Thus, the data generated by SISCOSERV will be useful to an array of institutions and public policies, allowing the use of more accurate and comprehensive statistics.

E.5. Country experience: COMESA Region

11.138. Table 11.12 indicates the data sources in the COMESA region for compilation of individual service categories.

Table 11.12

Sources of COMESA region for compilation of individual service categories

	Transportation	Travel	Communication	Construction	Insurance	Computer and information services	Royalties & License Fee	Operational leasing services	Misc. business, professional & technical
Burundi	Enterprise surveys	Enterprise surveys, ITRS	Bank data	ITRS	Bank data	Bank data	ITRS		ITRS
Comoros			Enterprise surveys		Enterprise surveys				Enterprise surveys
Djibouti			Direct reporting		Enterprise surveys and estimates				
Egypt	Exchange records and estimates	Admin data, expenditure surveys, ITRS	ITRS.	ITRS	ITRS and estimates	ITRS	ITRS		ITRS
Eritrea	Enterprise surveys	Immigration data average expenditure estimates	Enterprise surveys.		Enterprise surveys and estimates	Admin data			
Ethiopia	Direct reporting, estimates	Direct reporting & bank data	Direct reporting & bank data	ITRS	ITRS and estimates	ITRS	ITRS	ITRS, direct reporting	ITRS, direct reporting
Kenya	Direct reporting, admin data	Bank records	Enterprise surveys, admin data, ITRS	ITRS	Direct reporting, estimates	Admin data	ITRS	Enterprise surveys, direct reporting	ITRS
Malawi	Enterprise surveys, direct reporting, admin data, estimates	Departure cards, ITRS	Enterprise surveys		Enterprise surveys		ITRS	Direct reporting	ITRS
Mauritius	Enterprise surveys, admin data	Bank records							
Rwanda	Enterprise surveys, foreign exchange data	Enterprise surveys, admin data, foreign exchange data	Bank data verified by enterprise surveys	ITRS	Enterprise surveys and estimates	Bank records and admin data	ITRS	ITRS	ITRS
Seychelles	Enterprise surveys, direct reporting, estimates	Bank records	Monthly enterprise surveys		Enterprise surveys	Enterprise surveys	Enterprise surveys	Enterprise surveys	Enterprise surveys
Sudan	Bank records and estimation	Bank records, direct reporting by hotels	Bank records		ITRS	ITRS	ITRS		ITRS
Uganda	Enterprise surveys, immigration data, and estimates	Expenditure surveys, immigration records, surveys of schools and universities	Quarterly enterprise surveys		Enterprise surveys and estimates	ITRS	ITRS		ITRS
Zambia	Estimates	Enterprise surveys, admin data	Enterprise surveys		Enterprise surveys and estimates	Estimates based on historical surveys and admin data	Estimates based on historical surveys and admin data	Estimates based on historical surveys and admin data	Estimates based on historical surveys and admin data

Part III Data Compilation

Scope. Data compilation is understood as a set of statistical procedures performed on the collected data to derive new information according to a given set of rules and resulting in intermediate data and final statistical outputs. Data compilation includes, among other things, the use of weighting schemes, methods for imputing missing values or source data, statistical adjustment, balancing/cross-checking techniques and relevant characteristics of the specific methods applied. Part III includes an Introduction and overview of data compilation within the modes of supply framework (Chapter 12); Integration of data from different sources (Chapter 13); Compilation of resident/non-resident trade in services statistics (Chapter 14); Compilation of foreign affiliates statistics (Chapter 15); Compilation of other indicators for modes of supply (Chapter 16); Estimation and modeling of missing data, and forecasting or back-casting (Chapter 17).

Chapter 12 Introduction and overview of data compilation within the modes of supply framework

12.1. *Scope.* This chapter introduces data compilation with the modes of supply framework. It first covers the information needs of data users, then provides an overview of using an integrated approach to data compilation, reviews the need for phased implementation of data compilation recommendations, and finally provides an introduction to using models and estimates in data compilation, which will be further covered in chapter 17.

A. Data compilation within the modes of supply framework: issues to consider

A.1. Information needs

12.2. The information needs include the value of trade in services or sales/output of services by foreign controlled foreign affiliates, other monetary statistics (foreign direct investment flows and stocks, research and development expenditure in affiliates, income flows relating to foreign affiliates active in services sectors etc. In the same way there is interest in non-monetary data, in particular when it comes to assessing commitments made in trade in services agreements (e.g. number of mode 4 persons, number of foreign affiliates established abroad in the context of mode 3 etc.).

12.3. Many of these statistics are already defined within other frameworks. If implemented in national statistical systems such statistics may be extracted without additional cost if the level of detail needed is readily available (i.e. the frameworks for foreign affiliates statistics, foreign direct investment statistics, sectoral statistics, e.g. tourism, education, etc.). However some statistics require the development of new data sources or compilation systems, or the extension of existing ones by adding specific questions, breakdowns etc. in relevant questionnaires or forms, including administrative registrations.

12.4. To provide a better guidance on how to satisfy the information needs of data users, this Part of the Guide contains three chapters specially focused on particular areas of SITS:

- i. *Compilation of statistics on resident/non-resident trade in services* is covered in Chapter 14, which elaborates conceptual issues which are directly related the data

compilation; describes challenges and good practices in the compilation of particular EBOPS services categories in total and their detailing by trading partner, as well as their allocation to modes of supply; and provides guidance on services transactions between related enterprises;

ii. *Compilation of FATS* is also covered in Chapter 15, which contains a general description of compilation of foreign affiliate statistics, elaborates a set of FATS variables and the related data compilation issues and describes relevant country experiences;

iii. *Compilation of other (quantitative) indicators*, in particular for mode 2 and mode 4 (i.e., number of mode 2 persons travelling abroad and purchasing services and number of 4 persons crossing borders and temporarily abroad in the context of services contracts) is an important part of SITS. Challenges and good practices relevant to this topic are described in Chapter 16. In particular, Chapter 16 provides an overview of data variables on the movements of natural persons under modes 2 and 4 of services supply, describes the uses of various data sources in the compilation of the variables and provides a comparison of different sources and guidance on the organization of the data compilation process.

A.2. *Focusing on an integrated approach*

12.5. Part III gives a special attention to the promotion of an integrated approach to SITS compilation. As described in Part II there are several groups of data sources which can be used in the SITS compilation. This raises the issue of how to properly integrate data from various sources. Chapter 13 provides guidance on this topic by discussion issues and good practices in consolidation and merging of data and exploring possibilities of SITS compilation using data generated in other statistical domains. It also proposes a number of different approaches, taking into account the suitability for economies and considering differences in compilation systems.

12.6. *An integrated approach in the context of data compilation on resident/non-resident transactions in services.* Chapter 14 also propose to integrate data sources for compiling trade in services statistics. For example for travel, it is proposed to link with tourism statistics, in particular to develop coherent sets of data. This focuses in particular on the breakdown by purpose of travel, by type of product consumed or for compiling the supplementary item tourism related services in travel and passenger transport. Considering modes of supply, such an approach would enable to compile more detailed estimates of mode 2 supply of services, in particular travel by type of product consumed and linking to tourism statistics, i.e. tourism-related consumption/expenditure as suggested in ITRS 2008 or MSITS 2010, (see chapter 14, section C), using customs data or merchant category codes from credit card data. The scope of different statistical domains has to be taken into account and data sources integrated (e.g., chapter 14, section B, iv).

12.7. *An integrated approach in the context of FATS.* Compilation of FATS is described in Chapter 15 which focuses first on a general description of compilation of foreign affiliate statistics (Section A) and subsequently elaborates FATS variables and their compilation. It also gives a special attention to a number of selected additional data compilation issues and country experiences. It would also be possible to use or re-use existing data by linking with micro-level information e.g. through business registers (with a common identifier) for the compilation of these statistics. It should also be considered to use data from the Structural

Business Statistics (SBS) for further development on international services data by mode of supply accordingly for mode 1 and mode 4 as well as to combine the information on FATS to gather more insight details for mode 3.

A.3. A phased implementation of the recommendations on data compilation

12.8. The compiler's guide presents a phased approach for statistical compilation of balance of payments services statistics and foreign affiliates statistics, including the elaboration of statistics according to modes of supply. The proposed phased approach can in particular for modes of supply serve as a reference for producing approximations using balance of payments services and foreign affiliates statistics. This part evaluates to what extent existing statistics can match the information needs of trade negotiators as well the needs of economic analysts, in particular in the context of the GATS; it also identifies what would need to be developed in data compilation systems to respond to information needs when it comes to the international supply of services. Part III therefore identifies the main conceptual and statistical challenges in measuring the international supply of services, in particular for the modes dimension, also beyond balance of payments services and foreign affiliates statistics.

12.9. Data on trade in services have been compiled for a number of years in the context of the BPM5, but compiling more detailed statistics by type of service and by partner remains a challenge for many compilers. Not much information is currently compiled on activities of foreign affiliates, as FATS is a relatively new statistical domain. Moreover, modes of supply are not always easy to observe and consequently many data compilers have not yet compiled these data. On the one hand, the concept of modes of supply is not yet embedded in the existing national compilation systems. On the other hand, a complete new compilation of statistics on international supply of services by mode will necessarily cause a higher burden and additional costs for compiling economies, which is why a phased approach should be adopted based on what is proposed in MSITS 2010. Statisticians, both national and international, also need to have a more profound knowledge of how different services sectors operate in various economies. Compilers can choose between these different approaches which are elaborated in Part III. The respective size of an economy, the structure of the service sector or the importance of specific services could be indicators that could be used for focusing on one approach or the other, or adopting a combination of several approaches.

12.10. *A simplified allocation and direct compilation of SITS by modes of supply.* For the development of modes of supply information, a simplified allocation of FATS and balance of payments data to modes of supply is proposed in MSITS 2010.²²⁰ The so-called mechanical allocation of services categories either to one dominant mode or the indication of a distribution to several modes in the BoP, as well the simple allocation of FATS to mode 3, is considered as a very first starting point. This approach makes use of existing services data within the BoP/FATS framework to compile or to estimate statistics by mode of supply and further explained in Chapter 14, section C. However such information would just provide rough estimates and the compilation of the four modes of supply would deserve further elaboration.

12.11. But this simplified allocation is a reasonable very first step due to relative low costs and a minimum burden for compilers. Chapter 14 then further elaborate on the actual collection and compilation of data, in particular by suggesting the identification of modes in trade in services surveys (mainly mode 1 and 4, but also mode 2 under certain conditions).

²²⁰ MSITS 2010, Chapter V and Table V.2, as well as chapter 1, paragraph 1.5.

They could then be developed on a broader basis taking economic, political-economic and socio-economic issues into account; therefore mode 4 would be integrated in a broader concept of cross-border movements in globalization theories. Focussing on different user interests, specific sector studies would serve several purposes *e.g.* policy makers could also be interested in specific studies such as for services incidental to agriculture or environment services. This approach could be also combined for further elaboration and adjustments of the simplified allocation.

A.4. Use of models and estimates

12.12. This Guide recognizes that available data sources have their limitations and, therefore, SITS compilation has to include the use of models and estimates because part of the information cannot be collected or can be gathered only at an unsustainable cost, the available sources cannot provide the required coverage, detail, frequency and/or timeliness foreseen by the international standards, and the various sources to be combined in the collection system are partially overlapping. The Chapter 17 of this Part is specifically devoted to these issues and covers such topics like imputation for filling data gaps and for data editing purposes, forecasting and compensating for lack of timeliness of data sources, forecasting and compensating for lack of timeliness of data sources, back-casting and revising time series and model based estimates.

Chapter 13 Integration of data from different sources

13.1. *Scope.* As described in Part II of there are several groups of data sources which can be used in the SITS compilation. This raises the issue of how to properly integrate data from various sources. Challenges and good practices are described. The Chapter provides guidance on this topic and consists of the following sections: Data integration: an introduction (Section A), Consolidation of data (Section B), Merging data: an overview of issues and good practices (Section C), Country practices (Section D).

A. Data integration: an overview

13.2. The compilation of statistics on international trade in services requires the use of a wide range of data sources as some sources are complementary and their combined use can result in the production of more detailed and more comprehensive statistics.

13.3. Integration of different sources and re-using surveys for several purposes also has the potential to reduce the burden for compilers, in particular in the context of modes of supply. Furthermore, linking data on a micro-level could allow broader types of analysis. The potential of the approach of using information from other frameworks (migration, tourism, household surveys or even tax related information) therefore deserves further exploration by the compiler.

13.4. However, there is a danger that the some of the data sets resulting from integration of various data sources may be internally inconsistent.

13.5. This chapter will review issues compilers may face when integrating data sources covering the same activities or the same entities when compiling some of the more difficult service items and some suggestions to resolve these issues.

B. Consolidation of data

13.6. Consolidation of data sources provides multiple advantages for the compilers. First, it improves coverage and the diversity of information. Second, it usually reduces the resources to be allocated to the collection of statistics. Third, it allows a confrontation of the data leading to better quality results.

13.7. To consolidate (combine) data sources, compilers must find common denominators between these sources. In that sense, the role of the business register is primordial. The capacity to identify with more precision the provider of transactions is a key element to recognize the quality of the coverage of each source.

13.8. Compilers should also take into account other dimensions of data sources before merging. For example, the content of each source could be more or less compatible with EBOPS definition. The comparison between sources has to be made from different angles and this is particularly true when more than one source cover the same entity.

C. Merging data: an overview of issues and good practices

13.9. Merging data sources is usually not a simple task. Several dimensions have to be analysed by the compilers during that exercise, notably: entities covered, EBOPS categories, country breakdown, and period of reference.

13.10. *Entities covered.* Sources could collect statistics at different structural levels of the entity. Some sources may target the legal entity while others could survey entities responsible for the production. Companies could merge, be acquired, disappear, or simply modify their organisational structure so entities might be different from source to source if they have been surveyed at a different time. There could also be differences between how the business register defines the structural organization of an entity and how that entity defines its own structural organization. This last point might induce the compilers to incorrectly compare entities from different sources.

13.11. It is recommended that compilers analyze the coverage, possible overlap, and potentially differing definitions of variables across different data sources available, and make determinations of which data sources are most appropriate to use on a case-by-case basis.

13.12. *EBOPS categories.* Compilers should compare the EBOPS categories available from each source to be merged. Details and aggregations could be different from source to source. In the absence of clear definitions and guidance, respondents may interpret incorrectly the questions and include invalid transactions or exclude transactions.

13.13. *Country breakdown.* Data sources could have different levels of geographical breakdown. Some sources could even have no detail at all. For example, the country of transaction from the International Transaction Reporting System (ITRS) could be different from the country that effectively purchases or sales the service.

13.14. *Period of reference.* Values reporting on a monthly basis from one source could end up being different from the annual value coming from another source if the entity covered has a fiscal year that is different from the calendar year for example. The *BPM6* recommends the use of the accrual basis for determining the *time of recording* of flows. The accrual basis provides the most comprehensive information because all flows are recorded (including nonmonetary transactions, imputed transactions and other flows). The change of economic ownership is central in determining the time of recording on an accrual basis.²²¹

13.15. Other factors such as threshold for certain sources or the frequency of the survey will affect the comparison between sources. If a source is available only once every two years, compilers may have to develop a strategy to preserve the comparability for the year that source is not available.

13.16. All these possible differences between sources may complicate the comparability and integration of data sources not only at a global level but also at a micro level.

13.17. *Possible approaches and solutions.* There is no secret recipe to resolve problems when merging data. Compilers must have knowledge of the data they work with. They need to recognize the strengths and weakness of each source. Data sources are rarely equivalent. A source may provide solid information for some transactions but be weak for others. Obviously, if compilers could identify a source in which they have more confident, that source could then play a role of benchmark to which the other sources will be compared to.

13.18. When compilers manage their own surveys, they have more control on the quality of the process and of the results. Questionnaires are likely to be more precise in their requests which should help respondents to provide more exact transactions. Compilers have also a

²²¹ BPM6 Compilation Guide, paragraph 1.21.

better control on which entities are being surveyed to respond to the needs in term of coverage.

13.19. As it is not possible to directly survey all activities, compilers must also rely on external sources. They then need to evaluate the quality of these sources (coverage, content, definitions, etc.) to understand the possible issues when merging sources.

13.20. *Linking various data sources.* It is vital to avoid approaching businesses multiple times for different surveys concerning the same information. Above all, statistical surveys should not request information that the business has already supplied to other authorities. The SBR should be linked to the trade register to enable the analysis of the effects of international trade on production, employment and enterprise performance. The enterprise is recommended as statistical unit in the link between trade and business statistics. Therefore, trade data collected and registered at the level of the declaring unit of trade operators or establishments need to be connected and aggregated at the level of the whole enterprise via characteristics available in the business registers. The linking of trade and business registers allows generating relevant information on the structure of external trade without collecting additional data from businesses.

D. Country experiences

D.1. Country experience: Canada

13.21. This sub-section describes Canada's experience in integration of data on commercial services from different sources.

13.22. To generate most of commercial services (services excluding travel and transport) statistics, three different annual sources are utilized by the Canadian compilers. First, there is a specific annual survey (International Transactions in Commercial Services – BP21S) on trade in services sent to 3,500 Canadian enterprises from different sizes and different economic sectors²²². Second, data are available from more or less (depending of the year) fifteen annual industry surveys covering more than 20,000 Canadian establishments from the service industries. Finally, records for more than 10,000 legal entities are extracted from an administrative source on non arm's length annual transactions with foreigners.

13.23. The linkage to the Canadian Business Register (BR) of each entities covered by these three sources is the key for integrating these sources. The BR is a structured list (a frame) of businesses engaged in the production of goods and services in Canada. The BR contains also elements such as the ownership, the industrial activity, the organizational structure, and the business number (a 9-digit number identifying the business and assigned at the time of registration with the Canada Revenue Agency)²²³.

13.24. Units from the Canadian Business Register are assigned with a statistical number and a level of organization status where the enterprise is the complete organisational unit of the

²²² To supplement the BP-21S, more than 200 entities from the insurance sector are also surveyed with two surveys of Canadian incorporated insurance companies and Canadian branches of foreign insurance companies. Both surveys collect financial transactions as well as service transactions.

²²³ For more information about the Statistics Canada Business Register, please consult "Statistics Canada Business Register – A Brief Guide, http://www23.statcan.gc.ca/imdb-bmdi/document/1105_D2_T1_V3-eng.pdf.

business entity. That statistical enterprise number becomes the common key from which all entities coming from the three sources could be linked. This is a very important aspect of the integrating process. The quality of the register directly influences the quality of comparison between different sources. A register that is not up to date may lead to error of interpretation. A team is constantly working on the register, making it reflecting, in the best way as possible, the structure of Canadian economy.

13.25. Two of the three sources (the industry surveys and the administrative data) have limited details in term of EBOPS categories. Some assumptions must be made to improve the breakdown notably by looking at the industrial classification of the entity trading. For example, in the administrative data, there is only one category for royalties (or charges for use of intellectual property). If values for royalties are reported by an entity of the audio-visual sector, the transactions will be assigned to the category Licenses to reproduce and/or distribute audiovisual and related products.

13.26. When all records from each of the three sources are linked to their statistical enterprise, it becomes possible to aggregate and compare them. However, these three sources are not considered to be equal in term of quality and details.

13.27. Data coming from the industry surveys are indirectly measured. Respondents indicate the percentage of their total revenues related to international trade in services then that amount is broken down by type of services by replicating the total national revenues and expenses by products or activities. No breakdown is available though between transactions concluded between related partners and between unrelated entities. Furthermore, the geographical breakdown is only available for the total international trade of goods and services.

13.28. Administrative records from the non arm's length transactions tax form do only present trade with affiliated parties and several categories of services are combined to simplify the responses. Furthermore, the legal entity (identified with its own business number) could correspond to a portion of the statistical enterprise.

13.29. The specific survey on international trade in commercial services has the advantage to be very detailed with 32 different categories of services. The respondent is required to provide trade by country and by affiliation for each of these categories. Furthermore, the questionnaire is coming with definitions and guidance to help the respondents.

13.30. For the majority of the entities, data are available for only one of the three sources. For these cases, values provided are kept by default. When there are values present for more than one sources, the rule of thumb is to chose data coming from the specific survey on trade in services (the BP21S) if the values are larger, equal or even slightly lower than the other sources. Other cases have to be reviewed individually. Further analysis is done to insure the validity of the transactions. For example, current transactions will be compared with previous year's numbers. This is a long but necessary exercise where the knowledge of the subject matter people is requested. Values from more than one source could be combined if, for example, one source is more precise for some elements but less with other ones.

13.31. Over time, it becomes easier to evaluate the quality of each source and how respondents provide information in each of these sources. This experience facilitates the revisions and improves the quality of the statistics.

13.32. By integrating three different sources, Canadian compilers are able to improve the coverage, make a better use of the limited resources, and reduce the response burden of respondents. Even though not all sources are equal in details and content, they all provide a useful indicator to identify units that have trade in services. And when the signal is strong, those units could then be surveyed with a more complete questionnaire.

D.2. Country experience: the United States

13.33. Below is a brief description of the USA experience in combining transport data from different sources.

13.34. The U.S. Bureau of Economic Analysis (BEA) measures the revenues of U.S.-operated vessels for transporting export freight by combining data from several sources. The primary sources of information are 1) two mandatory BEA surveys of U.S. air and ocean carriers, 2) U.S. Census Bureau data on U.S. exports by air, and 3) U.S. Army Corps of Engineers (USACE) data on U.S. exports by water. Data from the BEA surveys are quarterly. Data from the Census Bureau and the USACE are monthly.

13.35. *Exports of freight transport services: Sea.* These receipts measure revenues of U.S. vessel operators for transporting U.S. goods exports from the United States to foreign ports and for transporting goods between foreign ports. The primary sources of information are USACE data on U.S. waterborne exports and BEA's quarterly BE-30 survey "Ocean Freight Revenues and Foreign Expenses of U.S. Ocean Carriers."

13.36. For U.S. waterborne exports, USACE provides BEA with data on the tonnages transported and the residency of the vessel operator. USACE export data cover both U.S.-flag and foreign-flag vessels providing liner, tanker, and tramp services.

13.37. The BE-30 survey covers U.S. ocean carriers' revenues and tonnage for transporting U.S. exports to foreign points and revenues for transporting freight between foreign points.

13.38. Other data sources include the Department of Agriculture's P.L. 480 report on subsidies for grain shipments under U.S. government foreign aid programs, the Baltic International Tanker Route Index, and the Baltic Dry Index.

13.39. Receipts of U.S. vessel operators for carrying U.S. exports are estimated in three steps:

i. First, USACE data on export tonnages carried by U.S.-flag vessels, for each type of service (liner, tanker, and tramp), are multiplied by corresponding freight rates. Freight rates for liner services are estimated dividing revenue by tonnage data from the BE-30 survey. Freight rates for tanker services are based on the Baltic International Tanker Route Index, an index of global rates in the tanker shipping market. Freight rates for tramp services are based on the Baltic Dry Index, an index of global rates in the dry bulk shipping market.

ii. Second, estimates of the export tonnages carried by foreign-flag U.S.-operated (FUSO) vessels, for each type of service, are multiplied by corresponding freight rates; these freight rates are derived from the same sources used to derive the freight rates of U.S.-flag vessels.

iii. Third, an adjustment is made to exclude subsidies paid by the U.S. government to U.S. operators of vessels carrying grain under foreign aid programs. Information on subsidies is obtained from monthly reports of the P.L. 480 Operations Division, U.S. Department of Agriculture.

- a. Receipts of U.S. vessel operators for carrying U.S. exports equals the sum of the revenues earned by U.S. flag and FUSO vessels, less the subsidies paid by the U.S. government for P.L. 480 grain shipments.
- b. Receipts of U.S. operated vessels for carrying goods between foreign ports are obtained directly from the BE-30 survey.
- c. Also included in ocean freight receipts are receipts of U.S. vessel operators from foreigners for operating leases of transportation equipment with crew for limited periods of time (such as a single voyage) for the carriage of freight and passengers. These receipts are reported on the BE-30 survey.
- d. *Exports of freight transport services: Air.* These receipts measure revenues of U.S. air carriers for transporting U.S. exports from the United States to foreign points and for transporting goods between foreign points. The primary sources of information are BEA's quarterly BE-37 survey, "U.S. Airline Operators' Foreign Revenues and Expenses" and the Census Bureau's monthly air export tonnage data.
- e. The BE-37 survey covers U.S. air carriers' revenues for transporting U.S. exports to foreign points and for transporting freight between foreign points. BEA uses ratios derived from transport tonnage information in the Census Bureau's air export data to distribute total U.S. air carriers' revenues to each of the balance of payments areas and countries.

D.3. *Country experience: France*

13.40. Before 2004, the information system was based on exchange of banknotes, credit cards transactions, travel agency transactions and annual border survey (EAF). General principles of the annual border survey were to know the number of visitors and to measure receipts of Travel item. With the introduction of the euro a single currency, and the setting up of the "Schengen agreement" allowing free movement of European citizens with no controls on borders, this information system became obsolete and there was the necessity of a new system. Therefore a shift to a Survey-based approach was organized in 2003.

13.41. Currently, three surveys are used for compiling the travel BOP item, one for receipts for personal and business travel, one for expenditure for personal travel and one for payments for business travel. We also complement these data with administrative data (mostly for the weighting scheme), credit card data (one-day trip expenses) and data from frontier workers.

13.42. The Bank of France is responsible for establishing the receipts and expenses for travel but works in cooperation with the *Ministère de l'artisanat, du commerce et du tourisme* ("Ministry of Tourism" in this document). As a matter of fact, the collection of data survey is outsourced. The contractor has to operate according to a detailed roadmap (targets by mode of transport, contents of the questionnaires, data quality management rules...). This outsourcing has been organized jointly with the Ministry of Tourism to obtain synergies. This cooperation contributes to the consistency of primary data used for the compilation of Balance of Payment on the one hand, for the statistics of Tourism (satellite account of the National Accounts) on the other hand.

13.43. *Travel Credits (receipts)*. The first survey, called EVE « Enquête auprès des Visiteurs venant de l’Etranger », is used for compiling the credit part of the travel item. This survey is quarterly. It is a frontier survey which interview visitors leaving France after their trip. Visitors are interviewed via a questionnaire currently translated into 9 foreign languages (Chinese, English, German, Italian, Japanese, Portuguese, Spanish, Russian, and Dutch). The questionnaires are distributed at ports, airports, on roads and railroads. We collect approximately 80,000 answers per year.

13.44. We use also administrative sources gathered by the Ministry of Tourism with the operational support of the Ministry in charge of transportation for counting the total number of persons leaving or entering France. They are based: on the main French airports for planes; on the declaration of railway operators for railways; and for roads on the declaration of motorway operators and regional authorities (which use counting terminals on or near the border) complemented by a count of the proportion of foreign cars.

13.45. *Travel Debits (expenditure)*. On expenditure side, there are two monthly surveys that allow estimating business travel and personal travel. Data on credit card provided by resident banks is also used.

13.46. The survey called SDT “Suivi de la Demande Touristique” (SDT), is used for compiling the debit part of the travel item. This survey focuses on personnel travels. It is a panel survey of 20,000 people, interviewed via a questionnaire sent by post. The panel represents French people aged 15 and above. Data on credit card expenditure is used as complement for same day personal trips.

13.47. To complete this survey, independently from the cooperation with the ministry of tourism, the Bank of France organizes another survey called EDPE « Enquête sur les Dépenses Professionnelles à l’Etranger (EDPE) », which focuses on residents business travel. It is a panel survey on 10 000 people, interviewed every month via internet surveys. Selected panel represents the social and occupational categories that are most likely to travel for business purposes (business managers, senior executives and professionals). The expenditure for business travel includes also a part of cross-border workers wages and represents 20 % of the “compensation of employees” line in the balance of payments.

13.48. The 6th edition of the IMF Balance of Payments and International Investment Position Manual (BPM6) presents a more detailed breakdown for travel services²²⁴. Such information is partially available in the existing travel surveys. Implementation of BPM6 requires a modification of survey questionnaires but adding too many detailed questions could make the questionnaires excessively complex, which would have a negative impact on the quality of responses. Therefore administrative sources will also be used.

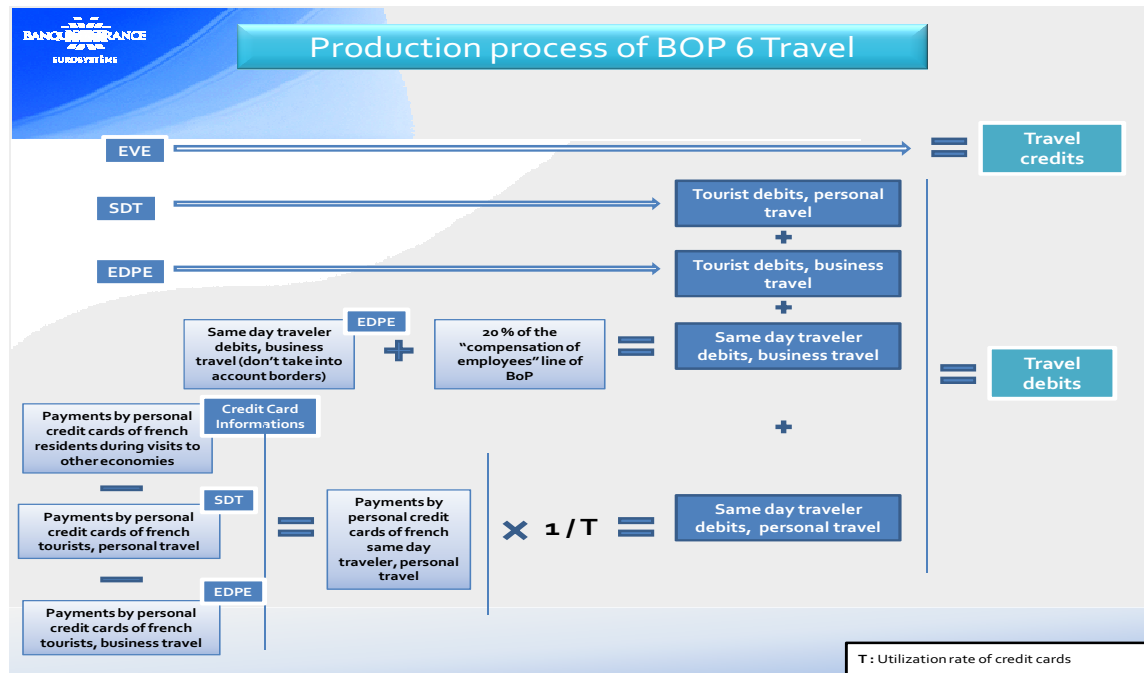
13.49. Travel credits: For personal travel and travel expenditure by product group, additional information will be obtained by adding details to existing questionnaires (« EVE » survey).

13.50. Travel debits: The breakdown of travel according to product group and supplementary items are already available in the “SDT” survey for personal travel, but the

²²⁴ BPM6 recommends a breakdown of personal travel into three sub-components based on the primary purpose of personal travel (health-related expenditure, education-related and other personal travel) and a breakdown of business travel by acquisition of goods and services by border, seasonal, and other short-term workers and other business travel. A separate supplementary breakdown of travel may be provided according to product group (goods, local transport services, accommodation services, food-serving services and other services).

required details for health-related expenditure and education-related expenditure are not. These detailed breakdowns and supplementary items will be estimated by using additional sources (administrative data from social security administrations or on French students abroad). For the business-related travel debits, data by product group will be obtained by adding details to existing questionnaires (« EDPE » survey).

Figure 13.1
French example of production process of travel item



D.4. Country experience: Turkey

13.51. In the compilation of international trade in services statistics of Turkey, international transactions reporting system (ITRS) is used along with the “Departing Non-resident Visitors” and “Arriving Citizens” surveys conducted by the Turkish Statistical Institute (TURKSTAT) for travel credit and debit respectively, the enterprise surveys conducted by the Central Bank of the Republic of Turkey (CBRT) and administrative data. Moreover, freight and freight insurance services are estimated from the data collected by TURKSTAT from the customs declaration forms. To give an idea, as end of 2012, *travel* and *transport* constituted 55.7 per cent and 31.7 of the total ITS credits and 20.1 per cent and 42.5 per cent of the total ITS debits, respectively in the BOP.

13.52. It is compulsory for resident banks and the CBRT to report all foreign exchange transactions (on behalf of their own as well as their clients) both for inflows and outflows through the monthly ITRS forms named “*Monthly Foreign Exchange Position Report*” consisting of statistical codes specified according to the IMF Balance of Payments Manual categories. Given the fact that transactions for a number of services cannot be fully identified and/or classified appropriately in ITRS forms, surveys are conducted for some of these items to overcome this drawback and the survey data collection has acquired greater importance for ITS statistics since 2006.

13.53. Namely, ITS surveys conducted by the CBRT either on a quarterly or monthly basis albeit all comprising monthly data are “Passenger Services”, “Catering” and “Ground Handling” services as regards air transport, “Insurance Services (other than freight insurance)”, “Postal and courier services”, “Telecommunication Services”, “News agency Services”, “Legal Services” and “Operating Leasing Services”. On the other hand, the BOP services items which are compiled through ITRS forms are “Construction”, “Financial Services”, “Charges for the use of intellectual property n.i.e.”, “Computer Services”, “Other Business Services except for legal services” and “Personal, cultural and recreational Services”. Finally administrative data are also used for “Other supporting and auxiliary transport services” credits both for air and sea transport.

13.54. As a way forward, for further improvement in the coverage and geographical breakdown of the ITS statistics of Turkey as well as to be able to compile ITS data on modes of supply, a meeting was held on ITS statistics in November 2011 under the co-ordination of the Republic of Turkey Ministry of Economy with the participation of the CBRT and TURKSTAT officials. A strategic action plan was adopted and working groups were formed also with the participation of the related regulatory and supervisory institutions.

13.55. The increasing role of the national statistical offices in the compilation of the SITS statistics particularly through “Business Registers/Business Statistics” was also discussed during the meetings given the fact that for most of the services items under “Other Business Services” and “Personal, Cultural and Recreational Services”, the enterprises which will determine the survey population may only be identified through Business Registers. In this context, further co-ordination possibilities were explored - with a special emphasis on the mentioned items - with TURKSTAT which conducts the “Business Registers/Business Statistics”. The more extensive usage of already existing administrative records was also brought forward. The work is still in progress for this joint long-term study.

Chapter 14 Compilation of resident/non-resident trade in services statistics

14.1. *Scope.* An overview of the basic concepts and definitions underlying the compilation of resident/non-resident trade in services statistics are provided in Chapter 1. Therefore, this Chapter elaborates only those conceptual issues which are directly related the data compilation of particular services categories for which there are particular compilation challenges, with emphasis on good practices. Also, as a general description of the data sources and data collection procedures relevant to SITS are provided in Part II this Chapter focuses on the country experiences, including challenges and practical solutions, in the compilation of particular services categories. The Chapter consists of four sections: Section A - Overview, Section B - Compilation of individual service categories, Section C – Services transactions between related enterprises, and Section D - Allocation of resident/non-resident trade in services to modes of supply.

A. Overview

14.2. The main elements of the conceptual framework for statistics on resident/non-resident transactions in services were described in Chapter 1. However, some conceptual issues are discussed in this chapter as needed for the clarification of the organization of the data compilation of particular services categories.

14.3. The sections of this Chapter are organized in a number of subsections following the specific structure of their object. Section B includes separate subsections covering descriptions of good practices and country experiences relevant to the first level service components of EBOPS 2010, as follows:

- B.1 Manufacturing services on inputs owned by others
- B.2 Maintenance and Repair services
- B.3 Transportation
- B.4 Travel
- B.5 Construction
- B.6 Insurance pension services
- B.7 Financial services
- B.8 Financial services indirectly measured (FISIM)
- B.9 Charges for the use of intellectual property
- B.10 Telecommunication, computer, and information services
- B.11 Other business services
- B.12 Personal, cultural, and recreational services

14.4. Section C covers modes of supply and resident/non-resident transactions. Section D elaborates statistical treatment relevant to services transactions between related enterprises.

B. Compilation of individual service categories

B.1. Manufacturing services on inputs owned by others

B.1.a. Scope

14.5. *Manufacturing services on physical inputs owned by others* is a new EBOPS category, which was introduced in MSITS 2010 to comply with the changes in the statistical

treatment of goods for processing at the time of the preparation of SNA 2008 and BPM6. This sub-section focuses on practical matters relevant to data compilation on this service category.

14.6. According to MSITS 2010 the following activities are included under *Manufacturing services on physical inputs owned by others*²²⁵: processing, assembly, labeling and packing that are undertaken by enterprises that do not own the goods. Examples include oil refining, liquefaction of natural gas and assembly of clothing and electronics. Excluded are the assembly of prefabricated construction (included in construction) and labeling, and packing incidental to transport (included in transport services). The manufacturing is undertaken by an entity that does not own the goods and that is paid a fee by the owner. The ownership of the goods does not change, so no general merchandise transaction on a balance of payments basis is recorded between the processor and the owner. Only the fee charged by the processor is included under this item, although such a fee may include the cost of materials purchased by the processor.

14.7. The BPM6 stipulates that the manufacturing fee received by enterprises for the manufacture activity undertaken on goods owned by other enterprises be classified as a service. The manufacturing services represent the value of the contract between the owner of the goods and the manufacturer. However, gross values of goods associated with manufacturing services should be identified as supplementary items in economies where they are significant.²²⁶

14.8. The services provided by the manufacturer may also be referred to as contract manufacturing, toll manufacturing, or toll services. These terms reflect an arrangement where some of the manufacturing activity is undertaken by one enterprise on behalf of another. Thus, the goods being manufactured are not owned by the manufacturing enterprise; rather, the manufacturing enterprise is engaged in the provision of a service for a manufacturing (contract) fee.²²⁷

14.9. It is possible that some goods will be manufactured in one economy, then be sent to another economy for further manufacturing, and then either be returned to the owning economy, returned to the economy where the initial manufacturing was undertaken (either for further manufacturing or for final sale), or sent to a third economy (for further manufacturing or for final sale). Indeed, it is possible that the goods never enter the economy of the residence of the owner as all the manufacturing is entirely done abroad. Until final sale, the goods should be recorded as being owned by the original party throughout and the various fees recorded under manufacturing services on physical inputs owned by others between the manufacturing economy and the economy where the owner is resident.

14.10. The movement of goods to be processed abroad is called "*goods sent abroad for processing*". This term refers to inward and outward processing as defined in the National Accounts and the Balance of Payments. In the case of outward processing, the principal (goods owner) sends goods it owns to another unit abroad (processor) to be processed. The principal pays a fee to the processor for the services provided. In the case of inward processing, a processor receives goods from abroad belonging to the principal and, in return for a processing fee, transforms the goods using its own labor and capital. Over the course of

²²⁵ MSITS 2010, paragraph 3.66 – 3.67.

²²⁶ BPM6, paragraph 12.5.

²²⁷ Ibid., paragraph 12.6.

the transformation process, the principal maintains legal and economic ownership²²⁸ of the raw materials and semi-processed goods as well as the processed goods²²⁹.

B.1.b. Differentiation between manufacturing undertaken on own account and manufacturing undertaken on goods owned by others

14.11. In collecting data on manufacturing services, the compiler also needs to be careful to differentiate manufacturing undertaken on own account from manufacturing undertaken on goods owned by others. In the former case, the processor may purchase supplies of goods and raw materials from one or more foreign suppliers (recorded in general merchandise), undertake assembly and processing of the goods, and the final product is sold on the account of the processor. In this case, the processor would have taken ownership of the goods and therefore is not engaged in contractual work.

14.12. In many cases, the enterprises engaging in manufacturing services may be identifiable by the special taxation arrangements that may be in place for their benefits. These arrangements normally entail the provision of special tax and duty concessions on their production and purchases, or outright duty exemptions. Thus, raw materials and other inputs may be imported duty free and the enterprise may operate under a lower corporate tax structure than other similar enterprises in the economy. Because of the preferential tax rates offered to these enterprises, the importation and production process may be closely monitored by the customs and tax authorities so that they cannot freely engage in commerce (by selling some of their inputs or outputs) with other enterprises that do not qualify for concessions. Thus, these enterprises may only operate in special locations that may be referred as export processing zones or free zones. The factory undertaking the manufacturing may sometimes be referred to as a bonded factory, implying that the goods are held in bond by the customs authorities. For example, in Mexico, these factories are referred to as *maquiladora*, named after the system under which these enterprises were established in the 1960s. However the compiler should note that many enterprises may be engaged in manufacturing services, without necessarily being in such special locations.

14.13. The compiler should note that there may be cases where the enterprises operating in special locations and receiving such concessions may actually own the goods being manufactured. They may purchase inputs domestically and from the rest of the world, manufacture goods, and sell these manufactured goods to one client overseas. This output would not qualify as manufacturing services.

B.1.c. The case of a technology transfer

14.14. In some case there is a technology transfer between a direct investor in Country A and an affiliate in Country B without which, the affiliate would not be able to undertake production. The production process may involve the use of raw materials and other inputs obtained from the direct investor or from other sources acquired by the affiliate. The direct

²²⁸ 2008 SNA, paragraphs 2.47 and 2.48.

²²⁹ In this chapter, the following terminology is applied: The *principal* is a unit that enters in a contractual relationship with another unit (here called processor) to carry out some part (or all) of the production process; the *processor* is a unit that carries out a specific production process based on a contractual relationship with a principal. The activities performed by the processor are denominated 'on a fee or contract basis'. *Processing* is a contractual agreement according to which the principal requires the processor to carry out a specific production process. The term 'sub-contracting' is sometimes used as well. In this context, the production process also includes supporting activities.

investor may then be responsible for marketing the goods after production. The mere existence of a direct investment relationship and the affiliate's reliance on the technology of the direct investor does not imply the provision of manufacturing services. The affiliate may be able to acquire goods on own account and may only be contracted to sell/transfer the final output to the direct investor. In that case, the manufacturing activity would be recorded on the books of the affiliate as manufacturing on own account.

B.1.d. Distinction between the goods associated with manufacturing activities and those under merchanting

14.15. The compiler should make the distinction between the goods associated with manufacturing activities and those under merchanting. For merchanting, the gross values of the goods acquired and sold are included in goods (as negative and positive exports, respectively). In the case of goods associated with manufacturing services, there is no change of ownership, unless the parties later agree otherwise, in which case the sales of the finished products would be recorded under general merchandise (the manufacturing fee would be paid as agreed in the initial contract). Furthermore, there may be cases where the goods under a merchant's ownership may be subjected to certain manufacturing services that changed the condition of these goods, in which case the purchases and sales should be recorded under general merchandise instead of merchanting.

B.1.e. Sources of data and data compilation

14.16. Data on manufacturing services on physical inputs owned by others can be collected through enterprise surveys, from customs declarations and ITRS. Administrative sources also can provide useful information.

14.17. *Enterprise surveys* generally represent the most efficient method to collect information on manufacturing services. Indeed, countries depending on ITRS are encouraged to consider conducting benchmark surveys on enterprises engaged in goods for processing transactions, which could be considered fact-finding surveys. The compiling agency may conduct dedicated surveys to collect data on the value of the manufacturing services as well as the value of the goods sent and received for processing. The latter would be useful to adjust the goods account to measure merchandise trade on a change of ownership basis. As noted previously, enterprises engaged in manufacturing services may operate under special customs and tax regulations; therefore, when collecting the information, the compiler should exert care to identify the concessions given to enterprises operating in special locations and properly record external transactions.

14.18. *Customs declarations* currently used by most countries for IMTS do not facilitate the recording of the manufacturing services. A possible solution is for countries to amend their customs declaration forms to require that traders report the value of the manufacturing services on the goods being traded. However, this is a possible long term solution as there are various factors that will have to be considered before this option is pursued. Customs declaration forms may be designed according to legal specifications that underpin trading arrangements and it may be difficult to adjust these forms solely for statistical purposes.

14.19. *Combining data from customs declarations with the results of enterprise surveys.* Compilers may also consider combining data from customs declarations with the results of enterprise surveys, when both datasets are available. While such merged data would not necessarily provide compilers with advantages in developing aggregate measures of

manufacturing services, such data could be very useful, in combination with appropriate screening questions on enterprise surveys, for determining the detailed product composition of exports and imports for those firms that indicate they either receive goods from abroad for processing or send goods abroad for processing, and for partner country attribution. With appropriate models, it may even be possible to develop value measures for goods for processing.

14.20. Matched detailed product data could also provide a basis for making adjustments to merchandise trade data to convert to a change of ownership basis, and to meet the requirements of paragraph 14.22 to record the gross value of goods for processing, when the other sources by themselves are not sufficient, while reducing the burden on enterprise survey respondents to provide very detailed trade data.

14.21. *ITRS* may provide some information on the value of the manufacturing services. However, the compiler should ensure that this amount does not include payments for other goods and services. Thus, the *ITRS* may need to be adjusted to collect specific information on the manufacturing services and to exclude all other transactions payments between the processor and the principal.

14.22. *Tax records.* The manufacturer may be required to provide statements to the tax authorities on its income and expenses as part of the close monitoring that may be in place due to its receipt of tax concessions. Such statements may be available from the customs authorities or the tax authorities. These agencies may also be able to identify the value of the manufacturing services from the relevant tax on provision of such services.

14.23. The gross value of goods for processing, both of the goods sent for processing (raw materials) and goods returned to the country of origin after the completion of processing (finished products), should be identified as supplementary items in economies where they are significant. These values could be identified in *IMTS*, in enterprise surveys, or in a supplementary inquiry in an *ITRS*.

B.1.f. Difference between the value of the goods before processing and the value of the goods after processing may not be equal to the value of manufacturing services

14.24. The *SITC* compilers, however, should be aware that the difference between the value of the goods before processing and the value of the goods after processing may differ from the value of manufacturing services for various reasons including the following:²³⁰

- i. Sale of goods after processing in the economy of the processor or to a third economy. In such cases, the value of the processed goods that are returned to the principal is diminished by the value of goods sold to the economy of the processor or to a third economy, the latter being separately recorded as exports by the principal;
- ii. Incorrect assessment of the values of goods sent and returned. Since there is no sale or purchase of the goods, the values recorded by customs at the time of import and re-export are notional values, whose balance probably do not differ by the amount of the processing fee received (resulting in balance of payments errors and

²³⁰ BPM6, paragraph 12.14.

omissions). Also, these values may be assessed differently by the customs authorities of the country of the sender and the customs of the country of the receiver;

- iii. Recording of the goods before and after processing across different periods;
- iv. Inclusion of holding gains or losses. Holding gains or losses accrue to the principal. However, it is likely that the changes in the value of the goods whilst in the possession of the processor could be included in the value of the goods and hence be mistaken for part of the manufacturing services. For example, if the price of oil changes substantially after the processor takes possession of the consignment, then the value of oil after manufacturing would include the price increase, the manufacturing services, as well as the value of other inputs;
- v. Scrapping of the goods whilst in the possession of the manufacturer. These goods may be included in the value of goods sent but excluded in the value of goods returned;
- vi. Inclusion of processor's overheads in the value of the goods after processing. The manufacturing services should only include overhead costs to the extent they relate to the processing of the goods;
- vii. Value of brand names in goods after processing. For example, a shoe manufacturer's logo adds value to the goods after processing; however this value should not be included in the manufacturing services;
- viii. Inclusion of the value of materials sourced from the economy of the processor. Materials procured by the processor as inputs in the production process and which may be sourced from the economy of the processor (or sourced from third economies and then transported directly to the economy of the processor) are included in the overall cost of production; it may be that only a portion of their value is reflected in the manufacturing services, the rest being inputs in other processing activities including on its own.

14.25. The compilation of data on manufacturing services on inputs owned by others may be facilitated by following the change of ownership principle in general merchandise. However, recording of the movements of goods across borders and statistical survey on trade in services are usually independent (so they might not be mutually consistent). The change of ownership principle demands additional information on activities of non-resident principals in the internal market of the processor's economy (e.g. from their VAT declarations in the processor's economy which is a practice in the European Union).

14.26. Table 14.1 presents export and import of processing services with possible combinations of related movements of goods and services across the borders for processing, after processing and also without any cross-border movements. It also explains the difference in recording of exports and imports of goods between the IMTS (cross-border concept) and BPM6 (ownership concept). It is obvious that in some cases there is no cross-border movements of goods related to the handover of goods between processor and principal (either before the processing or after the processing services are provided).

Table 14.1(a)

Processing services: Export of processing services (inward processing), Resident = processor (contractor)**Goods that may be recorded in IMTS; and Goods and Services that should be reported in BOP and NA**

Residency of the principal (owner of the goods to be processed)	Economy of origin of the good before processing	Economy of the processor	Economy acquiring the transformed good	Export of processing services (inward processing) Resident = processor (contractor)		Goods that may be captured in the IMTS (processor's territory)		Goods and services that should be recorded in BOP and NA of processor's economy (change of ownership principle)	
						Import	Export	Import	Export
Non-resident	Non-resident	Resident	Non-resident	1	Non-resident principal sends goods to resident processor. Transformed goods are sent away from resident processor's economy.	Import of goods to be processed	Export of transformed goods	-	Service: Processing fee.
			Resident	2	Non-resident principal sends goods to resident processor. Transformed goods are purchased by residents.	Import of goods to be processed	-	Goods: Purchases of transformed goods by residents of the processor's economy (includes processing fee)	Service: Processing fee.
	Resident	Resident	Resident	3	Non-resident principal purchases goods in the resident processor's economy. Transformed goods are purchased by residents.	-	-	Goods: Purchases of transformed goods by residents of the processor's economy (includes processing fee)	Goods: Sales of goods to non-resident principal from economy of processor. Service: Processing fee.
			Non-resident	4	Non-resident principal purchases goods in the resident processor's economy. Transformed goods are sent away from the resident processor's economy.	-	Export of transformed goods	Goods: Sales of goods by non-resident in the processors economy	Goods: Sales of goods to non-resident principal from economy of processor. Service: Processing fee.

Table 14.1(b)

Processing services: Import of processing services (outward processing), Resident = owner (principal)
Goods that may be recorded in IMTS; and Goods and Services that should be reported in BOP and NA

Residency of the principal (owner of the goods to be processed)	Economy of origin of the good before processing	Economy of the processor	Economy acquiring the transformed good	Import of processing services (outward processing) Resident = owner (principal)		Goods that may be captured in the IMTS (principal's territory)		Goods and services that should be recorded in BOP and NA of principal's economy (change of ownership principle)	
						Export	Import	Export	Import
Resident	Resident	Non-resident	Resident	5	Resident principal sends goods to non-resident processor. Transformed goods are sent back to the resident principal's economy.	Export of goods to be processed	Import of transformed goods	-	Service: Processing fee.
			Non-resident	6	Resident principal sends goods to non-resident processor. Transformed goods are sold abroad by resident principal.	Export of goods to be processed	-	Goods: Sales of transformed goods to non-residents (includes processing fee)	Service: Processing fee.
	Non-resident	Non-resident	Non-resident	7	Resident principal purchases goods from non-resident. Transformed goods are sold abroad by resident principal.	-	-	Goods: Sales of transformed goods to non-residents (includes processing fee)	Goods: Purchases of goods from non-residents (does not include processing fee). Service: Processing fee.
			Resident	8	Resident principal purchases goods from non-resident. Transformed goods are sent to the resident principal's economy.	-	Import of transformed goods	-	Goods: Purchases of goods from non-residents (does not include processing fee). Service: Processing fee.

Table 14.1(c)

Processing services: Export of processing services (inward processing), Resident = processor (contractor)**Goods that may be recorded in IMTS; and Goods and Services that should be reported in BOP and NA**

Residency of the principal (owner of the goods to be processed)	Economy of origin of the good before processing	Economy of the processor	Economy acquiring the transformed good	Export of processing services (inward processing) Resident = processor (contractor)		Goods that may be captured in the IMTS (processor's territory)		Goods and services that should be recorded in BOP and NA of processor's economy (change of ownership principle)	
						Import	Export	Import	Export
Non-resident	Non-resident	Resident	Non-resident	1	Non-resident principal sends goods to resident processor. Transformed goods are sent away from resident processor's economy.	Import of goods to be processed	Export of transformed goods	-	Service: Processing fee.
			Resident	2	Non-resident principal sends goods to resident processor. Transformed goods are purchased by residents.	Import of goods to be processed	-	Goods: Purchases of transformed goods by residents of the processor's economy (includes processing fee)	Service: Processing fee.
	Resident	Resident	Resident	3	Non-resident principal purchases goods in the resident processor's economy. Transformed goods are purchased by residents.	-	-	Goods: Purchases of transformed goods by residents of the processor's economy (includes processing fee)	Goods: Sales of goods to non-resident principal from economy of processor. Service: Processing fee.
			Non-resident	4	Non-resident principal purchases goods in the resident processor's economy. Transformed goods are sent away from the resident processor's economy.	-	Export of transformed goods	Goods: Sales of goods by non-resident in the processors economy	Goods: Sales of goods to non-resident principal from economy of processor. Service: Processing fee.

Table 14.1(d)

**Processing services: Import of processing services (outward processing), Resident = owner (principal)
 Goods that may be recorded in IMTS; and Goods and Services that should be reported in BOP and NA**

Residency of the principal (owner of the goods to be processed)	Economy of origin of the good before processing	Economy of the processor	Economy acquiring the transformed good	Import of processing services (outward processing) Resident = owner (principal)		Goods that may be captured in the IMTS (principal's territory)		Goods and services that should be recorded in BOP and NA of principal's economy (change of ownership principle)	
						Export	Import	Export	Import
Resident	Resident	Non-resident	Resident	5	Resident principal sends goods to non-resident processor. Transformed goods are sent back to the resident principal's economy.	Export of goods to be processed	Import of transformed goods	-	Service: Processing fee.
			Non-resident	6	Resident principal sends goods to non-resident processor. Transformed goods are sold abroad by resident principal.	Export of goods to be processed	-	Goods: Sales of transformed goods to non-residents (includes processing fee)	Service: Processing fee.
	Non-resident	Non-resident	Non-resident	7	Resident principal purchases goods from non-resident. Transformed goods are sold abroad by resident principal.	-	-	Goods: Sales of transformed goods to non-residents (includes processing fee)	Goods: Purchases of goods from non-residents (does not include processing fee). Service: Processing fee.
			Resident	8	Resident principal purchases goods from non-resident. Transformed goods are sent to the resident principal's economy.	-	Import of transformed goods	-	Goods: Purchases of goods from non-residents (does not include processing fee). Service: Processing fee.

B.1.g. Country experience: Czech Republic

14.27. Estimation of exports and imports of services in the Czech Republic is based mainly on a quarterly statistical survey on international trade in services (ZO 1-04). Processing services in territorial structure are presently surveyed on CPA 2 digit-level in order to meet the requirements of the Czech national accounts (esp. supply and use tables).

14.28. There are also data available on industrial services contracted by residents with non-residents from annual industrial statistical survey based on PRODCOM²³¹ classification. This data source is used as a detailed commodity breakdown (CPA) and also as an adjusting base for annual revision of export and import of processing services (from the quarterly survey) during balancing of supply and use tables.

14.29. In the movements of goods within the EU the processing services cannot be estimated by the difference between goods crossing borders before and after the processing (e.g. there has been recorded a long-term negative margin on outward processing with other EU countries). There are at least the three general reasons why the margin in goods cannot be used:

i. Goods after processing are handed over (by the resident processor) to non-resident principal and the principal sends them to a third economy. The processor had reported acquiring the goods for processing into Intrastat but the non-resident does not report them as processed but as general merchandise.

ii. Goods after processing are handed over (by the processor) to non-resident principal within the processor's economy and the principal sells it within the processor's economy (must be registered for VAT here). The processor had only reported acquiring of goods for processing into the Intrastat but there is no cross-border movement of goods after processing between principals' and processors' economies.

iii. Goods sent for processing and especially received after processing may be significantly affected by misreporting (asymmetric reporting?). Goods sent for processing within the EU are not under custom control in the Czech Republic. For this reason it is difficult to keep reporting consistent on both sides in manufacturing chains, for example when processor A reports movement of goods into the country (for processing) and processor B reports movement from the country (after processing).²³²

14.30. The reasons mentioned under (i) and (ii) lead to differences between processing services reported and margins resulting from gross flows in goods for processing. However, the difference caused by point (iii) must be eliminated by additional adjustment of goods excluded from general merchandise in order to keep the balance on trade of goods and services unaffected. In fact, the adjustment is done by comparing the processing services (declared by exporters or importers of services) and declared cross-border movements of

²³¹ PRODCOM aims at giving data of the production of industrial products produced by companies of the Member States. It is based on the Council Regulation (EEC) No 3924/91 of 19 December 1991 on the establishment on a Community survey of industrial production. The title comes from the French "PRODUCTION COMMUNAUTAIRE", community production.

²³² Holding gain/losses or overheads are not likely to be between them as the entity obliged to report the movements of goods across the borders in Intrastat is the processor (not the owner of goods).

goods (reported into Intrastat by the same reporting units, as these units are usually the same – exempt for chain-linked processing). The adjustment requires sufficient data comparison of both data sources on the individual level of reporting units, however, the computation of the adjustment is carried out on the aggregate level.

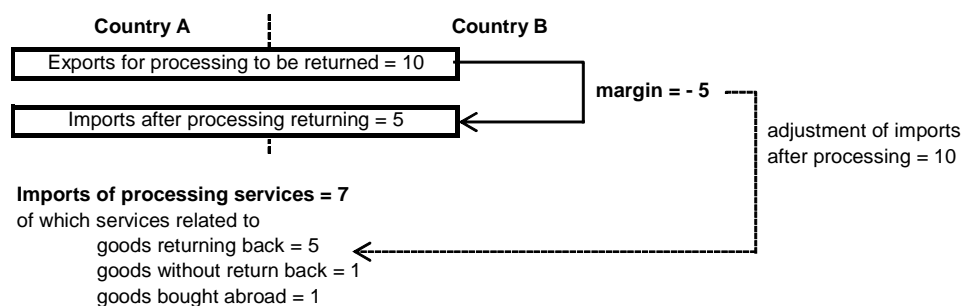
14.31. For the purpose of this adjustment ad-hoc annual surveys on a voluntary basis are conducted among the processors (exporters of services) and the principal of goods sent abroad for processing (importers of services). Detailed information is collected on the relationship between services exports and imports and the related movements of goods across the border and the handover of transformed goods to the principal within the processor’s economy. The additional adjustment of goods is carried out in order to keep the margin between excluded goods after processing and goods before processing in accordance with the particular processing services related to the movements of the goods.

Box 14.1

Example of adjustments: Import of goods after processing

Assume that country A imports processing services in value of 7 (5 is related to processed goods returned back, 1 to goods exported (sent) for processing without returning to country A and 1 to goods bought abroad and imported (brought) to country A after processing). IMTS records: export of goods for processing (returning to country A) is 10 (NoT 41), import of goods after processing was 5 (NoT 51).

The margin between goods sent for processing (5) and returning after processing (10) is -5. These goods cannot be considered as general merchandise and must be excluded from the IMTS export and import in order to obtain export and import according to the BPM6. However, import of services is 5 so the adjustment of import of goods after processing has to be 10 (=5+5), i.e. the additional adjustment of general merchandise is -10. For a correct recording of the value of exported goods the import of services for 1 is supposed to be imputed to the export of goods (the value of imported services processed on goods sold abroad) and value of services for 1 should be excluded from the import of goods (the value of imported services processed on goods bought abroad and imported to the country A).



B.1.h. Country experience: Hong Kong, China

14.32. For the compilation of imports and exports of manufacturing services, various cost components involved in processing activities on goods owned by another economy are required as explained earlier in this sub-section. Goods after processing are either returned to the principal’s economy or sold offshore directly. Data collected from different surveys on both onshore and offshore channels are used to obtain aggregated statistics on sales and cost components of the processed goods and their geographical breakdowns by the principal’s and/or the processor’s economies. The changes in values and percentage shares of the various cost components need to be monitored over time. The variation in commodity mix of the

processed goods need also be monitored and analyzed. Meanwhile, only those imports/exports of materials for processing and exports of processed goods under international transactions with change of ownership are used to adjust at macro level the trade in goods statistics for all origins and destinations concerned. The ensuing paragraphs illustrate with examples the related compilation in Hong Kong.

Imports of manufacturing services and related transactions in trade in goods (from the perspective of owner residing in the reporting economy)

Case I: Outward processing in Mainland China with processed goods returned to Hong Kong

14.33. In the processing activities between Hong Kong (principal in the reporting economy) and Mainland China (non-resident processor), the value of manufacturing services are reported under “Imports of services”. The import value of the manufacturing services is derived from the total of the processing fee charged by the non-resident processor and the amount reimbursable by the principal for the materials procured by the processor.

14.34. Regarding trade in goods, the cost of materials supplied by the principal from or via Hong Kong for processing without change of ownership is not included in “Exports of goods”. By the same token, the value of the processed goods returned to Hong Kong should not be treated as “Imports of goods”. The cost of input materials supplied by the principal to the processor from a third economy directly is included in “Imports of goods” in the economy of the principal.

Case II: Offshore trade activities involving outward processing with processed goods sold offshore

14.35. Similar to Case I, the value of manufacturing services is reported under “Imports of services”. The import value of the manufacturing services is derived from the total of the processing fee charged by the non-resident processor and the amount reimbursable by the principal for the materials procured by the processor. Margin earned from the offshore sale of the processed goods are not included in “Exports of services”.

14.36. As for trade in goods, the cost of GFP supplied by the principal from or via Hong Kong to the processor without the change of ownership is not included in “Exports of general merchandise”. The value of the processed goods sold offshore directly without returning to Hong Kong is treated as “Exports of general merchandise”. The cost of materials supplied by the principal to the processor from a third economy directly is included in “Imports of general merchandise” in the economy of the principal.

Exports of manufacturing services and related transactions in trade in goods (from the perspective of processor residing in the reporting economy)

14.37. For illustration purposes, it is assumed a Hong Kong company (processor in the reporting economy) provides manufacturing services on the materials owned and supplied by an Australian company (non-resident principal) and the processed goods are returned to Australia. The value of manufacturing services is reported under “Exports of services”. The respondent can provide the export value of manufacturing services based on the total of the processing fee charged and the amount reimbursable by the non-resident principal for the materials the processor procured. For trade in goods, the value of the processed goods is not treated as “Exports of general merchandise” because the ownership belongs to the Australian

company. Besides, the value of input materials supplied to the processor by the principal from Australia or a non-resident are not included in “Imports of general merchandise”. However, the value of materials procured by the Hong Kong company from a non-resident to be used in the processing activity are already recorded under “Imports of general merchandise” and would be part of the manufacturing service.

B.2. Maintenance and repair services

B.2.a. Scope

14.38. MSITS 2010 states that these services include maintenance and repair work by residents on goods that are owned by non-residents (and vice versa). The repairs may be performed at the site of the repairer or elsewhere. Maintenance and repairs on ships, aircraft and other transport equipment are included in this item. The compilers should note, however, that the following items are excluded: (i) cleaning of transport equipment (included in transport services), (ii) construction repairs and maintenance (included under construction), (iii) maintenance and repairs of computers (included under computer services). No distinction is made between those repairs included by the customer in intermediate consumption and those included in capital formation²³³.

B.2.b. Compilation of value of maintenance and repair services

14.39. The value recorded for maintenance and repairs is the value of the repair work done, not the gross value of the goods before and after repairs. The value of maintenance and repairs encompasses any parts or materials supplied by the repairer and included in the price (parts and materials charged separately are excluded from services and included in general merchandise). Both minor repairs that maintain the item in working order and major repairs that extend the efficiency or capacity of the good or extend its life are included.

B.3. Transport

14.40. This sub-section deals with transport services in particular methods for CIF/FOB adjustments, valuation of freight transport services on a transaction basis and other issues which are considered as challenging for the compilation of this EBOPS component.

B.3.a. Scope

14.41. *Transport* covers the process of carriage of people and objects from one location to another location as well as related supporting and auxiliary services and rentals (charters) of carriers with crew. Transport also includes postal and courier services. Transport can be classified according to the mode of transport and what is carried – passengers or freight, as well as by other auxiliary services. It should be noted that a transport provider may subcontract in order to be able to use the services of other operators in providing part of the final transport service²³⁴.

14.42. EBOPS 2010 is largely following BPM6 regarding the cross-classification of transport by mode of transport and by kind of service. However, while BPM6 recommends three modes of transport (sea, air and other modes of transport), EBOPS 2010 recommends

²³³ MSITS 2010, paragraph 3.78

²³⁴ Ibid., paragraph 3.80.

the disaggregation of the other modes of transport into identification of 6 additional modes of transport: space transport, rail transport, road transport, inland waterway transport, pipeline transport, and electricity transmission, plus other supporting and auxiliary transport services. Accordingly, EBOPS requires compilation of transport services by these 8 modes of transport. Of the 6 additional modes of transport in EBOPS, three (rail, road, and inland waterway) are to be broken down by passenger, freight and other services.

14.43. In this connection the compilers should be reminded that:

i. *Passenger services* cover the transport of people. It includes all services provided in the international transport of non-residents by resident carriers (export of services) and that of residents by non-resident carriers (import of services). Also included are passenger services performed within an economy by non-resident carriers (that is, via internal flights). Passenger services includes fares and other expenditure related to the carriage of passengers, including any taxes levied on passenger services, such as sales or value-added taxes. Fares that are a part of package tours, charges for excess baggage, vehicles, or other personal accompanying effects, and food, drink or other items purchased on board carriers are also included. The valuation of passenger transport should include fees payable by the carriers to travel agencies and other providers of reservation services. Also included are rentals provided by residents to non-residents, and vice versa, of vessels, aircraft, coaches or other commercial vehicles with crews, for limited periods (such as a single voyage), for the carriage of passengers. Excluded are services provided to non-resident passengers by resident carriers within the resident economy (included in travel), cruise fares (included in travel), rentals of time charters without crew (included in operating leasing) and rentals or charters that are financial leases (not included in EBOPS 2010),²³⁵

ii. *Freight services* cover the transport of goods. It may be divided into three types of freight services. The first two are associated with the fact that, in line with the recommendations of the 2008 SNA and BPM6, goods are valued f.o.b. at the customs frontier of the exporting economy.²³⁶ The third type encompasses the freight of goods where they do not change ownership. These three types are described in MSITS 2010.²³⁷ The service charge may be charged directly or included in the price of merchandise. All freight costs up to the customs frontier of the economy of the exporter are shown as incurred by the exporter. All freight costs beyond the customs frontier of the economy of the exporter are shown as incurred by the importer. In practice, whether these costs are considered to be imports or exports of freight services depends on the residence of the freight operator.

14.44. As mentioned above, the EBOPS transport item covers also (i) other supporting and auxiliary transport services and (ii) postal and courier services. According to what is carried, further broken down into namely *passengers or freight or other*²³⁸ (which covers supporting and auxiliary services like loading and unloading of containers, storage and warehousing, packing and repackaging, cleaning of transport equipment performed in ports and airports) is recommended.²³⁹

²³⁵ BPM6, paragraphs 10.76-10.77.

²³⁶ SNA, paragraph 3.149 and BPM6, paragraphs 10.31-10.34, 10.78.

²³⁷ MSITS 2010, paragraphs 3.98-3.101.

²³⁸ BPM6, paragraphs 10.74-10.81.

²³⁹ MSITS 2010, paragraphs 3.80-3.114.

14.45. *Sea transport* covers all transportation services by sea. *Air transport* over all transportation services provided by air. Other modes of transport: Cover all transportation services not provided by sea or air. A breakdown is required for passenger, freight and other of which the *extended classification recommends the following*:

14.46. *Space transport* includes satellite launches undertaken by commercial enterprises for the owners of the satellites (such as telecommunication enterprises) and other operations performed by operators of space equipment as such as transport of goods and people for scientific experiments. Also included is space passenger transport and payments made by an economy in order to have its residents included on the space vehicles of another economy.²⁴⁰

14.47. *Rail transport* covers transport by trains. A further sub-division between Passenger rail, Freight rail and other is required.

14.48. *Road transport* covers transport by lorries, trucks, buses and coaches. A further sub-division between Passenger road transport, Freight road transport and other road transport is required.

14.49. *Inland waterway transport* relates to international transportation on rivers, canals and lakes. Included are waterways that are internal to one country and those that are shared among two or more countries. A further sub-division between Passenger inland waterway Transport, Freight inland waterway transport and Other inland waterway transport is required.²⁴¹

14.50. *Pipeline transport* covers international transport of goods in pipelines, such as the transport of petroleum and related products, water and gas. Excluded are distribution services, typically from substations to the consumer (included in Other business services n.i.e.) and the value of the products transported (included in general merchandise).

14.51. *Electricity transmission* comprises services for transmission of electric energy at high voltage over an interconnected group of lines and associated equipment between points of supply and the points at which it is transformed to low voltage for delivery to consumers or delivery to other electric systems. Included are charges for the transmission of electricity when this is separate from the production and distribution process. The provision of electricity itself is excluded. Also excluded are distribution services of electricity (included in Other business services n.i.e.).

14.52. *Other supporting and auxiliary transport services* cover all other transportation services that cannot be allocated to any of the components of transportation services described above.

14.53. *Postal and courier services* cover the pick-up, transport, and delivery of letters, newspapers, periodicals, brochures, other printed matter, parcels, and packages, including post office counter and mailbox rental services. A courier service provider might contract separately with more than one transport operator. Commissions which are payable by providers of transport services to an agent should be separately recorded. Excluded are freight insurance (included in insurance services); goods procured in ports by non-resident carriers (included in goods); maintenance and repairs on transport equipment (included in

²⁴⁰ See also MSITS 2010, paragraph 3.86.

²⁴¹ Ibid., paragraph 3.89.

maintenance and repair services n.i.e.); and repairs of railway facilities, harbors, and airfield facilities (included in construction).

B.3.b. Valuation of transport services

14.54. Transport services should be recorded on a gross basis, namely:

i. The valuation of passenger transport services includes fares and other expenditures related to the carriages of passenger. Thus several inclusion and exclusion options apply e.g. rentals and time charters (without crew) are excluded (recorded under operational leasing services) or whereas cruise fares are recorded under travel. Those specifics are described later on;

ii. Valuation of freight services is following the FOB principle. Different payment freight arrangements where the cost differ from the recommended method will be evaluated later on.

14.55. *CIF/FOB adjustments.* For recording transport services correctly various aspects of this service item have to be considered. First of all, for data derivate from international trade in goods statistics CIF/FOB adjustments are needed since different concepts are used for goods and services. Imports in international trade in goods statistics are calculated on CIF (including costs of transportation and insurance) whereas in the BOP imports are calculated on FOB i.e. value of transportation and insurance is recorded as import of these services and only the remaining value is recorded as imports of goods.

14.56. Tables 14.2 and 14.3 show the conceptual differences. The difference between CIF and FOB values are the freight costs (transport and insurance) and are considered as services in the BOP. This calculation does not necessarily reflect the actual costs, respectively the invoice value which is paid and differs from the statistical value²⁴². Various approaches are applied as regards the methodology for estimating or compiling transport services accordingly.

Table 14.2

Valuation principles of merchandise statistics and Balance of Payments

Merchandise statistics	Import of goods	Statistical values CIF (cost insurance freight)
	Export of goods	Statistical values FOB (free on board)
BOP	Import of goods	Statistical values FOB (free on board)
	Export of goods	

Table 14.3

Transformation from international trade in goods to Balance of Payments

	IMTS	BOP	
	Goods	Goods	Services
Import	CIF	FOB	Invoice - FOB
Export	FOB	FOB	Invoice - FOB

²⁴² The report from Statistics Denmark provides an overview on differences between the statistical CIF and FOB value. EuroGrant 2009 Balance of Payments, Grant agreement number 20821.2009.001-2009.715, final report May 2010; the Glaab report recommends collecting invoice values instead of statistical value; the import and export of freight services should be collected.

14.57. The following paragraphs shall describe criteria for CIF/FOB adjustments and conversion factors; the possibility to use customs data as auxiliary information to improve the reliability and consistency of the data delivery to both National Accounts and BOP. Methods to calculate the FOB value of imports in BOP should consider also the mode of transport, the distance and the type of commodity transported

14.58. To determine the conversion ratio of the CIF imports to FOB imports, given that the CIF value is known firstly the FOB value should be known or the cost of transport and insurance services between partner countries borders should be known. Different methods are applied. In some countries FOB value for freight transport services is calculated by subtracting a fixed percentage from the CIF value subsequently only a part of the freight costs are considered as transport services since the difference of CIF-FOB has to be distributed between insurance and transport costs. Methods to estimate the split between insurance services and transport services on the service share on incoming goods shall apply. Another option is asking in surveys a sample of importers or transport firms about the transportation cost.

14.59. Bearing in mind not to increase the response burden on enterprises, international trade in goods data can be used to estimate CIF/FOB ratios. Essential for using trade in goods data is that information on invoice and delivery terms can be provided either by foreign trade or from declarations through customs authorities, whereas presented in table 14.2 the FOB/FOB value for the BOP has to be calculated.

14.60. *FOB Method:* Compilation of the coefficient as a ratio between the statistical value (CIF-type) and the invoiced value (of the transactions with FOB-type delivery terms²⁴³). This method consists in selecting those transactions with FOB type delivery terms and compiling the ratio between their FOB-type invoiced value and the corresponding CIF-type statistical value. The ratio thus compiled is applied to the total statistical value (CIF-type) adjusting it to a FOB type value. Advantages of the FOB Method are given by simplicity and low-cost of compilation.

14.61. For example, Norway is collecting through customs authorities' information on delivery terms, commodity code, statistical value, additional freight costs, and mean of transport and country of consignment. Thus, the share of freight costs of the CIF value and hereby the FOB value for total imports can be estimated. The Norwegian method for estimating freight costs uses import lines as a share of the CIF values (which are a row in a data set containing a value for each variable). Only lines are used with sufficiently high value, single goods²⁴⁴ imports and delivery term on FOB basis. These methods sorts out a high amount of data and only a certain per cent is available for estimating the freight share.

14.62. The Dutch method is similar to the previous described model. The FOB value is calculated by subtracting the total freight costs (product of the freight share and the statistical CIF) from the statistical CIF. CBS receives the same variables as Norway. Statistics Netherlands uses a model, the so called "delivery-terms-FOB-method." This method is using the goods transactions with delivery terms FOB. The CIF-FOB correction is calculated by dividing the invoice value by the statistical value.

²⁴³ The delivery-terms-FOB method has been developed by Statistics Netherlands.

²⁴⁴ If more than one good is imported the freight cost cover all the goods have been imported.

14.63. Denmark is using one coefficient for FOB estimations. Since 2004 the values are estimating by subtracting 2% from the CIF value regardless the partner country, transport mode and goods type. This amount is further split into transportation services and insurance services by a fixed ratio 4:1, correspondingly. Coefficients set up on aggregated level of imports enables break down by different partners, modes of transport or groups of goods etc. Denmark is obtaining following variables needed for the calculations: statistical value, CIF for imports and FOB for exports, invoice, goods codes on CN8 level, weight or quantity, mean of transport, country of origin and code of procedure. Since no delivery terms are available Denmark is working with several assumptions, as shown in Table 14.4.

Table 14.4

Valuation assumptions

Imports: Invoice value < Statistical value → FOB type Invoice value ≥ Statistical value → CIF type
Exports: Invoice value ≤ Statistical value → FOB type Invoice value > Statistical value → CIF type

Thus the freight share is calculated for imports using the invoice value where the delivery term is as assumed on FOB basis.

14.64. Owner and operator arrangements in case of leasing arrangements are essential for the nature of transportation services, especially leasing contract for vessels and aircraft (financial leasing vs. operational leasing); e.g., wet and dry leasing for aircraft, and operator of vessels.²⁴⁵ Operator and owner arrangement have to be specified according to balance of payments purposes.²⁴⁶

14.65. *Valuation of freight transport services on transaction basis.* For analytical purposes additional information on the value freight transportation services provided by residents to no-residents²⁴⁷ as supplementary information to the FOB/CIF valuation principles in international trade in goods statistics. The valuation on transaction basis indicates market price transactions excluding any kind of adjustments or estimations.

B.3.c. Tourism-related services in travel and international passenger transport

14.66. The bridge table between travel and passenger international transport services is further defined in International Recommendations for Tourism Statistics (IRTS 2008). For some countries the flow of visitors among travelers is important, and then the individual expenditures might be relatively significant in some countries. Therefore, it is essential to figure out the volume of tourism-related international air passenger transport in total transportation services. Then the question is “how to process those data in the compilation of “air transportation/passenger” and “travel” items of balance of payments?” There are two options as described in the IRTS 2008. One is showing “tourism-related international passenger transport” figures calculated through the two mentioned surveys as supplementary items to the BOP “air transportation/passenger” and “travel” to give an insight about the volume of tourism income and expenditures; Another is to subtract that figures from BOP “air transportation / passenger” item and to add it in BOP “travel” item for credit and debit

²⁴⁵ MSITS 2010, paragraphs 3.96. and 3.249.

²⁴⁶ See also BPM6 Compilation Guide, chapter 12.

²⁴⁷ MSITS 2010, paragraphs 3.107-3.110.

sides, simultaneously. It seems that option 1 is a kind of presentation issue, option 2 is a kind of composition change.

B.3.d. Country experience: France

14.67. *Presentation of transport services.* Apart from the specific case of freight, the computation of transport services in France's balance of payments is based on two data sources. The first source is based on data collected monthly from companies subject to general direct reporting requirement (DDG) involved in international trade in services (excluding travel). The companies subject to this requirement have been selected because their international exchanges of services reach more than 30 million of euro per year.

14.68. The second source is an annual survey conducted on a sample of resident non-financial corporations exporting or importing services but not subject to the general direct reporting requirement. This survey is called the complementary survey on trade in services (ECEIS) and provides data that supplement the data provided by the DDG reporting system.

14.69. These sources²⁴⁸ cover the whole international trade of services for resident non-financial corporations and so include transport services. The reported figures related to transportation correspond to services between a resident transportation provider and a non-resident economic agent (as exports for the French balance of payments), or between a non-resident transportation provider and a resident economic agent (as imports for the French balance of payments). A breakdown of these data is available (imports or exports) by partner country and by transportation mode (sea, air, rail, space transport and others transport). Except for the 'other transport' mode, a supplementary breakdown by type of service (passengers, freight or other services) is also available.

14.70. *The specific case of freight.* Freight services are also recorded through the two sources previously mentioned. The reporting task is done mainly by the reporting resident companies. French carriers have to report their services to non-residents, but not the services they may offer abroad to French residents. Conversely, French companies are requested to declare imports of transport services in France from a non-resident carrier, but not international transport services conducted by a resident carrier. The data collected from reporting companies (DDG or ECEIS) is complemented by the estimation of the transportation costs indirectly paid ("FOB-isation" item). Indeed, goods transactions include a part of transportation and insurance costs which has to be added to the transport services. The amount of transportation included in the value of goods exports and imports represent an indirectly paid transportation service.

14.71. In France's balance of payments reporting system, the reporting companies declare:

- i. On the debit side, operations with non-resident carriers, related to imports FOB (in case the resident importer pays a non-resident carrier) and exports CIF (in case the resident exporter prepays a non-resident carrier).
- ii. On the credit side, operations of resident carriers with non-resident companies: exports FOB (in case the transportation is directly settled by the non-resident

²⁴⁸ More detailed information is available on the Bank of France website:

<http://www.banque-france.fr/economie-et-statistiques/espace-declarants/reglementation-de-la-balance-des-paiements-et-de-la-position>.

importer with a French carrier) and imports CIF (in case the non-resident exporter uses the services of a French carrier).

14.72. The “FOB-isation” method consists in recording freight transactions (regardless of the nationality of the carrier) : in case the system relies on the principle that if an export on a CIF basis is transported by a non-resident carrier, the exporter receives the total amount of the invoice and then pays the non-resident carrier. When an import is made on CIF basis and the transport is carried out by a resident carrier, the foreign exporter receives the total amount of the bill, transfers the price of the transport to the carrier. The FOB-isation method allocates the cost of transportation from the ‘goods’ transaction to the ‘transport services’ item. In practice, the ‘FOB-isation’ is obtained by applying the CIF/FOB rate and the share of CIF contracts to the amount of the value of goods exchanged. The breakdown of transportation mode is done using the mode of transport from customs declarations.

14.73. The CIF/FOB rate is known thanks to a survey about international transportation costs regularly undertaken by the customs administration (every 4-5 years). It is used in the compilation of the foreign trade statistics (by the customs administration), the Balance of Payments and the National Accounts (Rest of World Account). The scope of the survey covers the exporting or importing companies (intra and extra-EU). The sample consists in about 15 000 enterprises in 2009 which have been chosen from customs declarations. The survey collects the following items: transportation mode, nationality of carrier, origin or destination country, terms of delivery, amount of transportation cost. The CIF/FOB rate is 3.2% since January 2009.

14.74. The combination of ‘FOB-isation’ and direct data collection through the DDG and ECEIS reporting systems or surveys allows to fully cover all the cases of imports and exports, types of contracts, and residence of the carrier, as shown in table 14.5.

Table 14.5
Principles applied to the compilation of transportation services

France	Contracts CIF/FOB	Carriers	Operations recorded in receipts	Operations recorded in expenditure
Imports	C.I.F	Resident	Data collected	FOB-isation
Imports	C.I.F	Non-resident		FOB-isation
Imports	F.O.B	Resident		
Imports	F.O.B	Non-resident		Data collected
Exports	C.I.F	Resident	FOB-isation	
Exports	C.I.F	Non-resident	FOB-isation	Data collected
Exports	F.O.B	Resident	Data collected	
Exports	F.O.B	Non-resident		

14.75. *Recent and on-going improvements.* The new complementary survey on international trade in services (ECEIS) has been conducted since 2009. This new survey led to a substantial upward revision of the levels of transport service receipts and expenditures. The effect on the transport services was high on the other modes of transport, mainly road.

14.76. Currently, the bilateral data breakdown for ‘other transport’ is used to identify the mode of transport and split the data by type of service (freight, passengers and other service). In accordance to the BPM6 recommendations, the reporting forms for DDG and ECEIS will include a more detailed breakdown of ‘other transport’. This new breakdown will allow for a better data quality by transportation modes, by type of services and by country.

B.3.e. Country experience: Germany

14.77. This section describes the current approach of Germany to estimate transportation costs in connection with goods imports and exports. These costs are needed to correct the goods account (CIF/fob adjustment) and to calculate the major part of the freight costs in the transportation account.

14.78. The basic idea of the current approach can be described as follows:

- i. Transportation costs for merchandise imports/exports are calculated using weight (by transport mode) and freight rates.
- ii. Transportation costs are calculated for each mode of transport and country.
- iii. The adjustment of merchandise trade (conversion CIF values of FTS imports into fob values) and the calculation of the transport account are done in a one step process.

14.79. In addition to these points the approach fulfils further requirements. The data are updated frequently to reflect developments in the structure of the sector. The system does not increase the burden for reporting companies as publicly available data are used. It is possible to implement further details when they are available and the estimation is done fully automatically.

14.80. *Formula.* According to the ideas above the following formula for the calculation of the transportation costs is applied: $\text{Transportation Costs} = \text{weight} \times \text{freight rate}$ (subject to mode of transport, product group (in the case of sea transport), and distance). In order to apply this formula the information matrix of table 14.6 is used

Table 14.6

Information matrix to calculate transportation costs

	Weight	Product characteristic	Distance	Unit costs	Nationality
Sea Cargo	x	x	(x)	x	x
Air Cargo	x		(x)	x	x
Inland Waterways Cargo	x			x	x
Road Cargo	x		x	x	x
Rail Cargo	x		x	x	x
Pipelines	x		x	x	x

14.81. *Sources used.* In line with the requirement not to increase the burden for the reporters by implementing new data request, even on a voluntary basis, the information needed for the estimation are taken from the following public data sources:

14.82. *The weights* for imported and exported goods are taken from foreign trade statistics and are hence available on a monthly basis.

14.83. *Freight rates.* The transport prices vary not only with regard to the means of transport used and the transport route; they also depend on the characteristics of the goods being transported²⁴⁹ and the nature of the business relationship²⁵⁰, as well as a number of further influencing factors. The large number of these factors makes it practically impossible, in terms of costs, to conduct a representative survey of the freight rates actually paid during a given period. Thus, only a second best solution can be considered for the calculation of the freight costs. In the current approach we use information extracted from publications specialized in transportation, an internet research which was focused on more than 30 major carriers and data from transportation associations. Based on this information the transport costs for a standard container²⁵¹ were calculated for the various modes of transport. With regard to sea transport, owing to the availability of additional information, a further breakdown of the transport costs by containers, bulk goods and crude oil is made.

14.84. Due to the fact that transportation costs, in particular for sea transport, also fluctuate considerably over the course of a year, it is necessary to update the transport prices used for the estimation at very short intervals. As the price research conducted was extremely time-consuming, and therefore could only be carried out at longer intervals, the transport prices for each mode of transport are updated on the basis of the transport price indices calculated by the Federal Statistical Office.

14.85. *Mode of transport.* The mode of transport is not only of interest as a standard component according to BPM5 and BPM6, it is also necessary to take the modes into account in the estimation because the transport costs vary greatly depending on the means of transport used. Problems are caused by the fact that the modes of transport may change once or several times en route to Germany because of the transport chains which are in operation. These chains cannot, however, be appropriately taken into account when calculating the freight costs due to the lack of corresponding data. As an expedient, a “main mode of transport” is used as a basis for the estimation. The longest part of the total transport route (and hence as a rule also the stretch with the highest value) is covered using this mode of transport.

14.86. Information on the mode of transport is derived from the foreign trade statistics, in which an obligatory enquiry is made about the active mode of transport used to cross the EU’s external border. This is mainly sea or air and a good approximation of the actual main mode of transport. If another mode of transport is stated in the trade statistics, it is assumed that in the case of non-European countries, the goods were transported by sea to the large ports in the Netherlands and Belgium²⁵² and then transported onwards to Germany on the stated mode of transport.

14.87. *Nationality of the carrier.* Information on the nationality of the carriers is needed for the geographical breakdown of the calculated transport costs. A number of different sets of statistics are used as a basis to determine the relevant partner country. The nationality composition of the road toll statistics is used for the regionalization of lorry transport

²⁴⁹ Costs for refrigerated cargo > Costs for general cargo > Costs for bulk cargo.

²⁵⁰ Long-time business partners and those with large contracts pay lower tariffs than others do.

²⁵¹ 20ft equivalent unit (TEU) with an average loading weight of 14 tons.

²⁵² For mineral oil imports, Italy (Trieste) is assumed to be the unloading port for the countries of the Middle East.

(adjusted to compensate for the disproportionately large share of German trucks due to domestic transport). The ownership²⁵³ (not flag!) share of the countries among the world fleet is used for sea transport. Since only some sea transport is carried out using scheduled services, the breakdown of the world fleet by country can be regarded as an informative approximation. The same applies to air transport, i.e. the world market shares of the airlines are used. With respect to inland shipping, information on the flags of the ships is the sole data available, hence only this information is currently used. As cross-border rail transport has only been liberalized since 2007, no statistics are available for this yet. A robust estimation for the rail system is carried out on the basis of the technical systems of the national railway networks (e.g. track widths, line voltages, operating licenses).

14.88. *Transport insurance.* The amount of transport insurance is also estimated using this procedure, although no further details will be supplied here regarding the methodical particularities of insurance companies (service fee included in the insurance premium, etc.). Unlike transport costs, the insurance costs are, however, calculated as a share of the import value. This share is in line with the premium rates set by transport insurance brokers for transportation from/to various regions. These rates were calculated parallel to determining the transport costs by surveying several international transport insurance companies. The reported country structure for transport insurance is used for the regional breakdown of these costs.

14.89. Table 14.7 shows the information used for calculating the transportation costs for the imports from China in June 2010.

Table 14.7

Example of calculation of transportation cost for imports from China

Imports from China: 1,109,537t	Mode of transport	Distance	Product group	Unit costs	Costs in 1,000 EURO
Sea cargo	85.6%			139 €/t	151,141
+ chain sea->inland waterways	3.9%				
+ chain sea->road	8.3%				
+ chain sea->rail	0.2%				
Air cargo	2.0%			8,479 €/t	188,022
Inland waterways cargo	3.9%			4.90€/t	212
Road cargo	8.3%	300 km	0.08776€/t km		2,424
Rail cargo	0.2%	300 km	0.04636€/t km		30

Note: $(1,109,537 \times (0.856+0.039+0.083+0.002) \times 139 = 151,141)$

14.90. *Conclusion.* The approach described above keeps the cost/benefit ratio well-balanced and is in line with the recommendations of the IMF's BPM6. It takes into account all basic variables which constitute transportation costs, is flexible, and detailed monthly results are available with a time lag of less than two months after the reporting period.

²⁵³ According to BMP5, a ship is to be attributed to the country of the economic owner, and not to the country of the flag.

B.3.f. Country experience: Ireland

14.91. In Ireland transport services cover the carriage of passengers, the movement of freight, oil and gas pipeline transport and electricity transmission, along with the chartering of carriers and associated crew. Supporting and auxiliary services (e.g. cargo handling and storage, cleaning in ferry ports and airports, salvage operations) are also included. Export sales data for passenger transport are obtained from resident airline and ferry operators in terms of their receipts from non-residents for travel to and from Ireland.

14.92. Direct data on receipts for other types of resident transport companies are not available – such expenditure by non-resident visitors to Ireland being captured indistinguishably in the travel and tourism receipts (exports). Respondents may provide their best estimates' in respect of the geographical breakdown required because of the difficulty of knowing in all cases the precise country of residence of their customers. Payments by Irish residents to non-resident transport enterprises in general cannot be directly distinguished at present. Such payments (imports) are included in the travel and tourism expenditure data. Receipts by resident airline and shipping companies for freight services provided (exports) to non-residents are obtained from these enterprises, the geographical breakdown being provided on a best estimates' basis where necessary.

14.93. Imports of freight services are estimated from the official merchandise imports figures in calculating the necessary deduction to transform the imports valuation from a CIF (cost, insurance, freight) to a FOB (free on board) basis as required for BOP purposes. The overall CIF to FOB adjustment factors are 2% for intra-EU imports and 4.8% for extra-EU freight. In each case, the freight element is estimated to account for 90% of this overall adjustment while the remaining 10% is allocated to the insurance element. Within the transport category three service components are shown: passenger, freight and auxiliary services.

B.3.g. Country experience: Australia

14.94. Transportation is available broken down by the type of service only (passenger services, freight services and other services). Confidentiality constraints preclude the presentation of data on the basis of mode of transport (sea/air/other). The main data sources are the SITS, International Merchandise Trade Statistics (IMTS) and the Travel by Foreign Residents Model (TFRM). The IMTS are used to compile the freight debit component. The remainder on transportation services is compiled directly from SITS (transportation), with an adjustment to passenger fare earnings as reported in the SITS made with the TFRM.

14.95. Passenger services are reported by resident shipping and airline companies as travel revenue earned from international tickets sold abroad, whether to residents or non-residents, and regardless of whether that revenue relates to international travel or travel within a foreign country. Similarly, non-resident shipping and airline companies report revenue earned from ticket sales in Australia, whether to residents or non-residents, and regardless of whether it involves transportation between Australia and the rest of the world or transportation within Australia as part of an international journey. Data on the purchases of international airline tickets in Australia by foreign visitors are used to adjust upwards the passenger fare earnings by resident carriers (credit) derived above and to adjust downwards passenger fare earnings by non-resident carriers (debit). A similar adjustment is not made for Australian visitors abroad, resulting in a minor overstatement of travel debits offsetting both the slight

overstatement of resident carrier earnings (transportation credits) and understatement of non-resident carrier earnings (transportation debits).

14.96. The value of services provided to non-residents by Australian carriers in Australia, when sold abroad as part of an international ticket (on-carriage), is collected from the carriers and allocated to travel services. Services provided on purely domestic travel in Australia by non-residents, whether pre-purchased abroad or while in Australia, are also included in travel. No classification adjustments are made for non-resident earnings from residents for internal flights abroad, and all earnings from sales in Australia for on-carriage in a foreign country, or for pre-purchased domestic travel in a foreign country, are included indistinguishably in transportation debits. Cruise fares are excluded from passenger services and included in travel, although sea passenger services sold in Australia and provided to residents travelling from one country to another and any resident sea passenger earnings are included in transportation

B.4. Travel

B.4.a. Scope

14.97. Travel, as defined in MSITS 2010, differs from most internationally traded services in that it is transactor-based. Unlike most services in EBOPS, travel is not a specific product; rather, it encompasses a range of goods and services consumed by non-residents in the economy that they visit. Travel is defined as covering goods and services for own use or to be given away, acquired from an economy, by non-residents during visits to that economy. It covers stays of any length, provided that there is no change in residence²⁵⁴. The MSITS 2010 treatment of travel as transactor-based implies that its scope cannot be restricted to predefined categories of goods and services or to specific economic activities. This makes the compilation of data on travel quite challenging, when compared with most other service categories that follow a product-based classification.

B.4.b. Data sources

14.98. Travel can be compiled using a variety of data sources ranging from direct reporting, to traveler surveys and to administrative data. The typology of sources for travel data compilation is as follows. ITRS: (i) monetary flows between non-residents/residents travelers and residents/non-residents tourism providers, (ii) recording of payments made through bank notes, traveler cheques or credit cards. Surveys: (i) survey of travelers (demand side) - border surveys (mainly used for travel receipts) and household surveys (mainly used for travel expenditures), (ii) survey of enterprises (supply side) - survey of accommodation establishments, survey of tourist intermediaries (travel agencies, tour operators), (iii) both surveys used to detect physical variables (number of travelers) and to measure expenditures (nights spent). Other sources include payment cards data, partner data, and records of immigration administration.

14.99. One of the important data sources for EBOPS travel item (exports) is the survey of enterprises of tourism industry of the compiling economy. To properly use the results of such surveys the SITS compilers need to understand the conceptual framework of tourism statistics. The basic concepts are provided in box 14.2 while more detailed descriptions are available in two UN publications: IRTS 2008 and TSA: RMF 2008 available at the World

²⁵⁴ MSITS 2010, paragraph 3.115.

Tourism Organization website²⁵⁵. Each country should identify the most adequate compilation strategy to implement depending on the availability and quality of data that is possible to collect from each data source.

14.100. An ITRS system largely based on banks' settlements allows the compilation of data of expenditures on goods and services provided by resident corporations to non-residents, as well as their acquisition of goods and services to non-resident entities. These expenditures are closely related with the notion of travel credits and travel debits, but they are not a totally accurate, particularly in the case of the activity of travel agencies and tour operators, as explained in the next paragraph. Other expenses are also not properly captured by the ITRS, such as some of the personal expenses of short-term workers abroad, among others. When possible compilers should resort instead to direct reporting.

14.101. Travel agencies are the traditional intermediaries between travelers and travel related services providers, such as hotels, car rentals, cruise lines and package tours. Direct reporting allows for a better measure of travel expenditures booked through these intermediaries than what can result from an ITRS, since travel agencies have detailed information that allows them to classify as travel only the situations where individuals pay for tours to visit countries in which they are non-resident. Concerning package tours it is often the case that tour operators are in a better position to provide the product classification of different services assembled in a package. This information can be obtained through the implementation of a specific direct report for tour operators.

14.102. In a direct reporting system other firms report resident to non-resident transactions as travel. This occurs, for example, in expenditures related with sending workers abroad or receiving workers from other countries (excluding remuneration and international transportation). Also, receipts or expenses related to car rentals and accommodation services may be reported in this approach.

14.103. MTO and other payment institutions can also provide own account operations relevant for travel statistics, namely the purchase and sale of foreign banknotes at the counter and operations related with travelers' cheques. These cover transactions made by travelers through a physical mean of payment, other than credit or debit cards. Payment cards data is a valuable data source for the compilation of travel item, as described with more detail in chapter 10.

14.104. Information compiled in other statistics can also be useful sources of information to measure travel expenditures. This is the case, on the credits side, of tourism activity statistics (accommodation providers' statistics) along with accommodation prices in the consumer price index, and, on the debits side, of mirror statistics from partner countries. These may be used as a supplementary source of information for specific segments of travel expenditures.

14.105. Finally, the implementation of visitors' surveys providing information on the travel flows may provide more detailed insights, such as the purpose of travel without which the trip would have not taken place, the type of traveler, the structure of the expenses made during the trip and how travelers pay for those expenses.

²⁵⁵ See: <http://statistics.unwto.org/en/content/methodology-0>.

Box 14.2

Basic concepts of tourism statistics

A *traveler* is someone who moves between different geographic locations, for any purpose and any duration. A *visitor* is a traveler taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited.

The usual environment of an individual, is defined as the geographical area (though not necessarily a contiguous one) within which an individual conducts his/her regular life routines.

Tourism trip refers to the travel by a person from the time of departure from his usual residence until he/she returns. These trips taken by visitors qualify as tourism trips. Tourism refers to the activity of visitors.

An international traveler qualifies as an international visitor with respect to the country of reference if: (a) he/she is on a tourism trip, i.e. leaving the usual environment and (b) he/she is a non-resident travelling in the country of reference or a resident travelling outside of it. Tourism is therefore a subset of travel and visitors are a subset of travelers. These distinctions are crucial for the compilation of data on flows of travelers and visitors.

Tourism expenditure refers to the amount paid for the acquisition of consumption goods and services, as well as valuables, for own use or to give away, for and during tourism trips. It includes expenditures by visitors themselves, as well as expenses that are paid for or reimbursed by others.

Tourism consumption includes products acquired by visitors as the result of their expenditures plus acquisition of certain items such as social transfers in kind that benefit visitors, the imputation of accommodation services from owned vacation homes and financial intermediation services indirectly measured.

Tourism industry comprises enterprises which main output consists of *tourism characteristic products*, that is products that satisfy one or both of the following criteria: (a) tourism expenditure on the product should represent a significant share of total tourism expenditure (share-of-expenditure/demand condition); (b) tourism expenditure on the product should represent a significant share of the supply of the product in the economy (share-of-supply condition). This criterion implies that the supply of a tourism characteristic product would cease to exist in meaningful quantity in the absence of visitors.

Tourism from the demand perspective, refers to activities of visitors and is described by visitors characteristics and their expenditures

Tourism from the supply perspective refers to activities of tourism industry and is described by characteristics of that industry and supply of tourism characteristic products.

14.106. The framework designed in Portugal to compile travel statistics is to a large extent based on the instruments used to pay for travel expenditures, that is to say (a) payment cards, (b) traveler's checks and (c) cash. In what concerns to transactions settled in cash, the introduction of euro resulted in an additional difficulty for the compilers, particularly in the euro area countries. It is necessary to estimate these expenditures and this estimation can be quite challenging, since the use of cash must certainly differ according to the type of good or service acquired by travelers.

14.107. The selection of the data sources above-mentioned to use in such a framework depends upon the moment of payment of the expenditures: (a) pre-payment or (b) local payment, and upon the channel used to book and/ or pay for travel arrangements: (a) direct reservation or (b) reservation made through a travel agency or tour operator (resident or non-resident). The approach and sources selected to compile travel credits and debits may be

somewhat different, taking into account that the scope of data sources available and the degree of coverage that is possible to obtain from each data source individually can differ for the credit and the debit side.

14.108. Tables 14.8 and 14.9 present an overview of the main sources selected for each combination of channel, moment of payment and payments instrument used. The combinations showed in the tables are the ones that are more likely to occur. For example, the pre-payment of a trip booked through a direct reservation channel most probably will not be performed in cash. Therefore, this alternative was excluded from both tables.

14.109. In addition to the aggregate measure of travel credits and debits, BPM6 and EBOPS 2010 recommend the compilation of further breakdowns of travel. These breakdowns can be used not only to better assess the scope of travel activities and to gauge their possible impact in terms of economic activity, but also to ensure consistency between travel and other related statistics, such as the tourism satellite account.

14.110. Some of these requirements are not new compared with the previous editions of the Manuals. That is the case of the mandatory split between business and personal travel and the recommended supplementary breakdown of personal travel into health-related, education-related and other motives. Other breakdowns, such as the alternative presentation of travel according to the types of goods and services, consist of new challenges for the balance of payments compilation. A travel compilation system should draw on the advantages of the increased proximity with agents directly involved in the external operations and on the availability of more detailed information in order to meet all this requirements. Table 14.10 shows complementary data sources that can be used to compile different breakdowns.

Table 14.8
Main source for travel credit (supply side)

Channel used to carry out travel arrangements	Moment of payment	Payments instruments	Data Sources
Direct reservation	Pre-Payment	Payment Cards	Payment Cards Database
	Local payment	Payment Cards	Payment Cards Database
		Cash	Direct Reporting - Banks and MTO
			Payment Cards Database
			Survey
Traveler check	Direct Reporting - Banks		
Reservation made through a travel agency or tour operator (resident or non-resident)	Pre-Payment	Payment Cards	Tourist Activity Statistics; Accommodation Prices; Direct Reporting - Travel Agencies and Tour Operators; Survey
		Cash	
	Local payment	Payment Cards	Payment Cards Database
		Cash	Direct Reporting - Banks and MTO
			Payment Cards Database
			Survey
		Traveler check	Direct Reporting - Banks

Table 14.9
Main source for travel debit (demand side)

Channel used to carry out travel arrangements	Moment of payment	Payments instruments	Data Sources	
Direct reservation	Pre-Payment	Payment Cards	Payment Cards Database	
	Local payment	Payment Cards	Payment Cards Database	
		Cash		Direct Reporting - Banks and MTO
				Payment Cards Database
	Traveler check	Direct Reporting - Banks		
Reservation made through a resident travel agency or tour operator	Pre-Payment	Payment Cards	Direct Reporting - Travel Agencies and Tour Operators	
		Cash		
	Local payment	Payment Cards	Payment Cards Database	
		Cash		Direct Reporting - Banks and MTO
				Payment Cards Database
	Traveler check	Direct Reporting - Banks and MTO		
Reservation made through a non-resident travel agency or tour operator	Pre-Payment	Payment Cards	Payment Cards Database; Survey	
	Local payment	Payment Cards	Payment Cards Database	
		Cash		Direct Reporting - Banks and MTO
				Payment Cards Database
	Traveler check	Direct Reporting - Banks		

14.111. When defining the specific level of detail for each breakdown, other specifications should be considered in order to have an integrated and consistent framework, which would provide all details required by other statistical domains, such as the tourism satellite account, national accounts and the harmonized index of consumer prices. A needs assessment is essential to understand how the available data sources can be able to deliver the level of detail required. For this purpose, the cooperation between different statistical authorities seems to be crucial in order to reduce compilation costs, as well as to integrate diverse statistical systems and conceptual frameworks.

Table 14.10

Travel breakdown: data sources

Breakdown	Data Sources
Travel Purpose: Business / Personal	Payment Cards Database
	Direct Reporting - Travel Agencies and Tour Operators
Personal Purposes: Health-related, Education- related, Other	Survey
Group of Traveler: Border, seasonal and other short-term workers	Mirror Statistics
	Survey
Types of Goods and Services	Payment Cards Database
	Direct Reporting - Travel Agencies and Tour Operators
	Survey

B.4.c. Country experience: Austria

14.112. In Austria, OeNB and Statistics Austria have joined their forces for more than 10 years and are running a joint survey for tourism expenditures and the travel item. For collecting or compiling tourism in its forms of domestic, outbound and inbound the accommodation statistics (covering inbound and domestic) and the sample survey are used. These two basic surveys cover all forms of tourism with respect to the physical flows. For bringing in expenditure variables for inbound expenditure also T-Mona is used. These three basic statistics are followed by the compound statistics TSA and the Travel Item of the Balance of payments. The TSA uses several data sources, including the accommodation statistics, the sample survey and T-Mona. The T-BOP as a travel statistics that goes beyond the concept of tourism statistics also uses several tourism statistics as inputs as well.

14.113. The major tourism and travel statistics could be regarded as separate entities on the surface as they describe specific forms of tourism or follow different conceptual frameworks. In Austria statistical aggregates related tourism are closely interlinked with respect to harmonized concepts and definitions and mutual inputs for compilation.

14.114. Within the tourism statistics department of Statistics Austria the statistics are integrated in terms of reconciliation and integration of mutual inputs. The following remarks will concentrate on the use of mutual inputs regarding the reconciliation of basic tourism statistics, reconciliation of TBOP and tourism statistics and the reconciliation of compound statistics TSA and TBOP with the SNA.

14.115. *Reconciliation of basic tourism statistics.* The selection of the T-Mona²⁵⁶ sample is based on data of the accommodation statistics as these data are available on a detailed geographical level. The data are further used for weighting and grossing up procedures. Also the questionnaires are harmonized in major fields as, for example, the same categories of accommodation statistics are used in both statistics. As the accommodation statistics do not consider stays at friends and relatives but as this information is also included in the T-Mona survey, inputs also are used from the accommodation statistics to establish proper sample basis.

²⁵⁶ See paragraph 6.175.

14.116. The questionnaires of the sample survey and T-Mona are harmonized according to accommodation establishments and other definitions according to the tourism concept. The data sources sample survey and accommodation statistics both cover domestic tourism. Therefore the outcomes at least for the physical flows of the number of overnights and arrivals of Austrian residents in Austria are mutually checked.

14.117. Reconciliation of the BOP travel item and tourism statistics. This reconciliation is performed on both credit and debit sides of TBOP

- i. Credit side of the TBOP. The first major data source for the compilation of the credit side of the T-BOP is T Mona, as it delivers the average expenditure of non-resident tourists in Austria in paid and non-paid accommodation establishments. The expenditure questions in the T-Mona questionnaire meet TBOP needs and are harmonized with concept used in BPM6. The second major data source for the compilation of the credit side of the T-BOP is the accommodation statistics which delivers the population of non-resident tourists in paid accommodation establishments by country of origin. However due to survey restrictions the number of countries which are directly surveyed is limited to 60. In contrast to this limited geographical breakdown the T-BOP considers data from credit and debit card companies which are delivered by the Austrian National Bank and therefore delivers detailed information about the geographical breakdown. So data can be used to further splitting up the geographical breakdown of the accommodation statistics based on expenditure data.
- ii. Debit side of the TBOP. Major data source for the compilation of the debit side of the T-BOP is the sample survey. As the sample survey is based on the tourism concept harmonized questions are implemented to meet the needs for the travel concept of the T-BOP. Besides the differentiation between business and personal travel also same day travelers are included as T-BOP does not distinguish between lengths of stay as only the expenditure variable is important. Credit and debit card data which are implemented in the T-BOP are used for doing plausibility checks with the outcome of the sample survey. The data are also used to create a detailed geographical breakdown of the sample survey as for this survey the geographical breakdown is limited to approximately 10 because of the sampling error. This reconciliation exercise helps to overcome the limits of the sample survey.

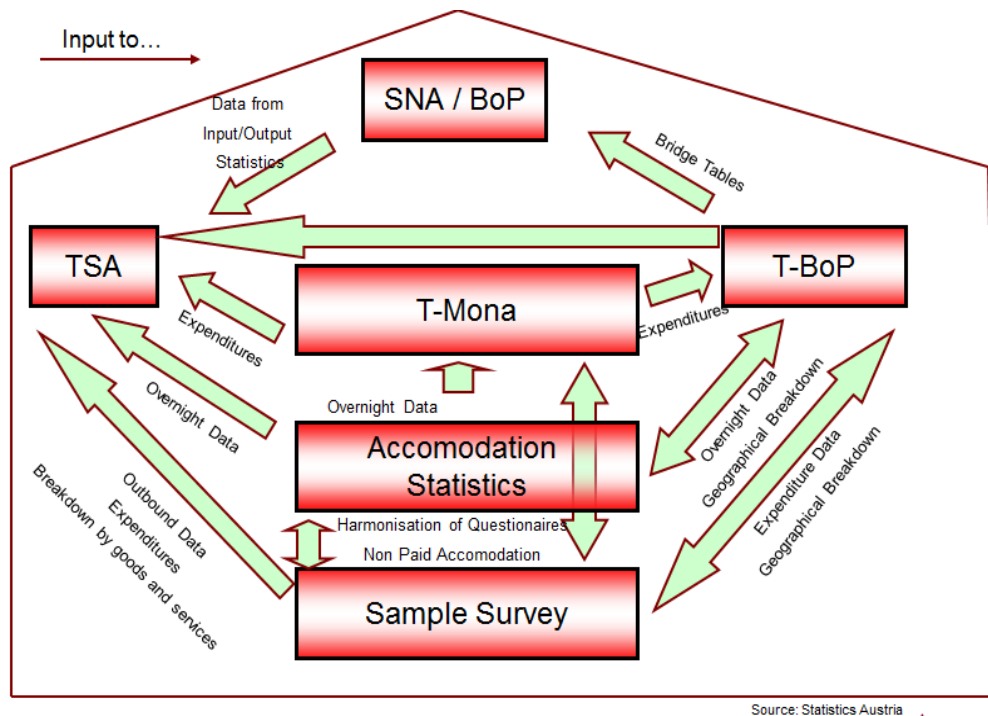
14.118. *Reconciliation of compound statistics and SNA*. This involved the reconciliation of basic tourism statistics and TSA as well as the reconciliation of TBOP, TSA and SNA:

- i. *Basic Tourism Statistics and TSA*. The population of overnight visitors for TSA purposes is delivered by the accommodation statistics with the additional geographical breakdown by hotel categories and Regions. Data on number and expenditure of domestic same day visitors are taken from the sample survey. The third basic tourism statistics that is used for TSA compilation is T-Mona which delivers the daily expenditure for goods and services broken down by accommodation, food and beverages, transportation and other.
- ii. *TBOP, TSA and SNA*. Though the T-BOP follows the travel classification and TSA follows the tourism concept the compound T-BOP statistics gives the crucial key figure for the TSA. As the travel components such as seasonal and border

workers, students, medical patients and those who are crossing the border but still are within their usual environment can be isolated, the key value of the T-BOP can be led over into the key figure of the TSA, followed by the top down approach of TSA compilation. The TBOP is input for compiling the rest of the world account, delivers bridge tables for the private consumption and indicates the value for business travel which is seen as production input in the NA. On the other hand input/output statistics and supply use tables from the NA are necessary data sources for the TSA.

14.119. To sum up the interconnection of the different sources can be seen as rooms in different floors of a house (see figure 14.1) where the SNA serves as the roof top giving inputs to the TSA and receiving input from TBOP. The basic tourism statistics T-Mona, accommodation statistics and the sample survey are major inputs for compiling the compound statistics TSA and T-BOP. The basic statistics are mutually harmonized in major conceptual fields and the outcomes are reconciled where they describe the same pieces of reality.

Figure 14.1
Integrated Aspect of Tourism and Travel Statistics



Source: Statistics Austria

B.4.d. Country experience: Hungary – health-related travel

14.120. Cross-border supply of health services and consumption of health services abroad are collected via business and transportation surveys, from the National Health Insurance Fund (OEP) and via border surveys for health-related tourism expenditure. The OEP is part of the Ministry of Health and supervises both the calculation and payment of benefits of the health insurance. OEP applies basically the per capita system for general practitioners in primary care (family doctors), a fee-for-service system for out-patient health care services

and a Diagnosis Related Groups (DRG) for hospital financing. Among others, OEP collects, processes and analyzes the statistical data of the health insurance system

14.121. The Hungarian Central Statistical Office (HCSO) compiles the services transactions between residents and non-residents for Hungary's macroeconomic purposes (balance of payments, national accounts) to meet the data requirements of the EU and different international organizations, as well as other user needs (trade policy, market research). Data of business and transportation services are based on annual and quarterly conducted surveys by HCSO. The statistical units are the resident enterprises, government and non-profit organizations, which supply services to non-residents and use services of non-residents. The surveys contain a list of 62 service types, according to EBOPS codes. Code 896 refers to health services. According to the methodology, here should be reported all services of NACE 86 category between residents and non-residents, provided by physicians, nurses, other qualified personnel working in health care. Should be included even the services provided from distance (ex. Laboratory, through internet). The services of tourists who travel abroad for health service are not included.

14.122. The main data provider for health services is OEP (National health insurance fund). Among the other companies who reported export data for health services were university hospitals, air emergency rescue companies and pharmaceutical trade companies. According to an agreement between OEP and HCSO (and based on the international methodology) the insurance fund export data are considered the emergency and other demanded health services provided by Hungarian health institutes for foreigners in Hungary, the invoices paid by the foreign health insurance companies, and the services paid by the foreigner at the site. The health services for foreigners who travel in Hungary for the certain purpose of medical treatment are considered as part of the tourism service and are not reported here.

14.123. On the other hand, imports are considered the emergency and other demanded health services provided by foreigner institutes for Hungarians, the invoices paid by OEP directly, and the services paid by Hungarians at the site, reimbursed by OEP later. The health services for Hungarians who travel abroad for the certain purpose of medical treatment are considered as part of the tourism service and are not reported here. The differences between the methodology of external trade statistics and SHA have as result different values for the national health accounts of Hungary and international trade of health services. In the trade statistics the difference is part of the tourism service import.

14.124. For the Hungarian insured persons the reimbursement of health spending is regulated by community laws, bilateral agreements, and national laws and regulations. The level of the reimbursement depends mainly on the country where the spending took place but other elements – the type of the service, the type of the insurance – have an influence as well. In case the patient does not have prior cover for the expenses, further aspect is whether the care took place on the territory of an EEA country or in a so-called third country.

14.125. *Data on tourism expenditure* is based on two surveys: Questionnaire on foreigners visiting Hungary, and Questionnaire on travel abroad. The sample, excluding lorry drivers, covers those outgoing foreign and incoming Hungarian citizens, who cross the border, including participants in package tours. The sample is a stratified non-probability sample. On a yearly basis, average sample sizes are ~120,000 questionnaires for foreigners and ~50,000 questionnaires for Hungarians. The selection of the days is systematic and casual. Data collection is conducted through personal interviews. The surveyed places are 24 road border stations and Budapest-Liszt Ferenc International Airport. The survey is voluntary.

14.126. Data collected through questionnaires is as follows:

- i. Citizenship, permanent residence, source country (in case of the survey of foreigners only)
- ii. Time of entering into Hungary (in case of the survey of foreigners only)
- iii. Motivation (reason of trip)
- iv. Type of accommodation
- v. Regions visited in Hungary (in case of the survey of foreigners only)
- vi. Type of stay, organized (travel agency) or individual
- vii. Amount of payment to travel agency, items of used travel agency services based on an optional list, components of a package (eligible list)
- viii. Traffic expenses in case of certain vehicle types
- ix. Total expenses in Hungary and abroad, specification of expenditures (eligible list)
- x. Demographic data by age and sex

14.127. From the whole set of questions two contain information that can be related to health care, namely the questions on purpose of visit and on expenditures. The purpose of visit, among others, can be “medical treatment” and “spa, wellness”. In the latter should be accounted both the spending at spas based on physician’s prescriptions, and spending for purpose of wellbeing or recreation.

14.128. However, a mechanical use of data from tourism statistics may lead to double-counting on aggregate level, since the household survey data (the Hungarian out-of-pocket expenditure data being based mainly on this survey) contain all the household spending no matter if it took place in the country or abroad, even if in the in the household survey guidance there is not any reference to payments abroad. The exports of health services to non-residents are more important than the imports, given the lower prices of the Hungarian health care providers.

B.4.e. Country experience: United States – education-related travel

14.129. Exports of education services measure foreign students’ education expenditures in the United States. Foreign students are defined as individuals enrolled in institutions of higher education in the United States who are not U.S. citizens, immigrants, or refugees. Data on the number of students are obtained from an annual survey of about 2,700 accredited U.S. institutions, conducted by the Institute for International Education (IIE). Characteristics of the population used in the estimates include the geographic area of origin (residence), type of institution (public or private), enrolment status (part-time or full-time), and academic level of institution (2 year, 4 year, or university).

14.130. Estimates of average expenditures for tuition and for room and board are developed from annual surveys of most U.S. accredited institutions conducted by the National Center for Education Statistics, U.S. Department of Education, and matched by BEA to the characteristics of the student population. Data on living expenses are based on Bureau of Labor Statistics, U.S. Department of Labor, estimates of low-income level family budgets in metropolitan and nonmetropolitan areas, reduced to a single person, and adjusted for inflation each year. Estimates of foreign students' expenditures are made by multiplying the number of students by average expenditures.

14.131. Imports of education services measure U.S. students' expenditures abroad. Students consist of (1) U.S. residents who receive academic credit for study abroad from an accredited institution of higher education in the United States and (2) students who enrol directly with foreign institutions, including medical students, and receive no academic credit from U.S. institutions. The total of U.S. students' expenditures abroad is the sum of the estimates for the two groups of students.

14.132. For students who receive academic credit from U.S. institutions, data on the number of students are obtained from an annual survey of about 1,300 U.S. institutions conducted by the Institute of International Education. Characteristics of the population used in the estimates include country of study, type of institution (public or private), and academic level of institution in the United States (2 year, 4 year, or university). Data do not include students who study abroad without receiving academic credit from a U.S. institution, or students enrolled for a degree overseas.

14.133. Student payments to U.S. colleges and universities for tuition and room and board are assumed to be forwarded to foreign institutions. Estimates of average expenditures for tuition and room and board are developed from an annual survey of most accredited U.S. institutions; the survey is conducted by the National Center for Education Statistics, U.S. Department of Education. Average living expenses are estimated by applying a ratio of U.S.-to-foreign living costs to the low-income-level family budget series developed for foreign students who study in the United States. Estimates of U.S. students' expenditures abroad are made by multiplying the number of students by average expenditures for tuition and room and board and for average living expenses.

14.134. For students who enrol directly in foreign institutions and receive no academic credit from U.S. institutions, supplemental estimates of education payments for the United Kingdom, Australia, Canada, and Ireland, based on national data from those countries, are used to capture U.S. students' expenditures.

B.5. Construction

B.5.a. Scope

14.135. Construction covers the creation, management, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature and other constructions such as roads, bridges and dams. It also includes related installation and assembly work, site preparations and general construction as well as specialized services such as painting, plumbing and demolition.

14.136. Construction is valued on a gross basis, i.e. inclusive of all goods and services used as inputs to the work, other costs of production and the operating surplus that accrues to the

owners of the construction enterprise²⁵⁷. Construction is also valued on a gross basis in the sense that it can be disaggregated into construction abroad and construction in the compiling economy. Construction credits consist of credits for construction abroad and credits for construction in the compiling economy. Construction debits consist of debits for construction abroad and for debits construction in the compiling economy.

14.137. A construction enterprise established in one economy may undertake the construction of large-scale projects (e.g., plant, buildings, bridges), in another economy either through a direct investment relationship (creating a foreign branch in that economy or through subsidiary or associate companies in that economy), or by directly undertaking the work itself. If the construction enterprise undertakes the work itself (via an unincorporated site office, for example), its activities may be regarded either as a direct investment activity or as an export of services by that enterprise, depending on circumstances.

14.138. If certain criteria are met the work undertaken is to be treated as having involved the creation of a separate institutional unit – a branch – resident in the economy where the activity is being carried out which is a direct investment enterprise (DIENT). Such criteria (as recommended in the *BPM6*) could be:

- i. The project extends over a period of at least one year;
- ii. The maintenance of a complete and separate set of accounts for the activity (i.e., income statement, balance sheet, transactions with the parent company, etc.);
- iii. The activity being subject to tax in the host country;
- iv. The existence of a substantial physical presence;
- v. The receipt of funds for its work for its own account, etc.

14.139. If some of the criteria mentioned above are not met, the activity is to be treated as an export by the construction enterprise. The decision is based on the weight of the evidence for a set of criteria and not on any single criterion; for example it would be very difficult to identify a branch if for the construction activity a separate set of accounts cannot be prepared or maintained. Construction activities involving major projects (bridges, dams, power stations, etc.) that are carried out through unincorporated site offices, in many cases, meet the criteria of a DIENT and thus are treated as part of the production of the host economy, not as an export of services to that economy.²⁵⁸

B.5.b. Country experience: Italy

14.140. In Italy's system, the attribution of the status of "branch resident in the host country" (see par. 6.60) is based on a simplified criterion: the entity carrying out the works is considered a resident branch of the host country if the project lasts one year or more. Consequently, depending on the estimated duration of the works, the construction activity is either regarded as an FDI-related operation, if the construction work extends over a period of at least one year, or regarded as a service transaction in the construction work takes less time (see par. 6.5). In Italy the gross construction value of projects lasting one year or more

²⁵⁷ BPM6 Compilation Guide, paragraph 12.95.

²⁵⁸ Ibid., paragraphs 12.92-12.94.

largely exceeds that of short-term works, both for constructions abroad (98% vis-à-vis 2% as an average in the period 2008-2012) and for constructions in Italy (80% vis-à-vis 20%).

14.141. *Constructions lasting less than one year.* The TTN questionnaire collects specific information needed to compile the construction services item. In particular, only for constructions abroad, firms are required to report the following transactions, in relation to the reference quarter:

i. Goods, services and labor purchased/acquired abroad, used to compile the construction abroad debits. According to MSITS 2010, the goods and services acquired by the resident enterprise from third economies should be recorded under the appropriate general merchandise or services item.²⁵⁹ However, in order to reduce the reporting burden, firms are not required to split the inputs purchased in the host economy from those acquired in third countries; as a consequence the inputs purchased abroad are all allocated to construction abroad debits and to the host economy as the partner country. Moreover, another approximation is that also labor costs are included in construction abroad debits, as it proved not feasible for firms to separately identify this cost component.²⁶⁰

ii. Goods purchased in Italy, used to adjust the BOP goods item, by deducting the corresponding amounts from merchandise exports. This is necessary in order to avoid duplications, as the goods purchased in Italy by the resident construction enterprise are also recorded in merchandise exports, based on foreign trade statistics.²⁶¹ In principle, also the services acquired by the resident construction enterprise from residents of the home economy should be excluded;²⁶² however, in order to simplify the reporting, it is assumed that all services are acquired from the host economy.

²⁵⁹ MSITS 2010, paragraph 3.138.

²⁶⁰ Ibid., paragraph 3.141.

²⁶¹ Ibid., paragraph 3.140, footnote 14, and BPM6, paragraph 10.22 (d).

²⁶² MSITS 2010, paragraph 3.138.

Box 14.3

Example of measurement of construction services

A construction enterprise resident in Italy starts a construction project in economy B on the 1st of February 2013. The end date of the project is the 10th of April 2013. The gross construction value is 100,000 euro. The project is considered as a construction service, as it lasts less than one year (69 days). The enterprise is requested to report the construction project in the TTN questionnaires related to both the first and the second quarter of 2013, specifying the project start and end dates, the counterpart country and the gross value of the construction.

In order to undertake the construction the enterprise purchases inputs (materials, services and labor) during the first quarter. The purchases are reported as follows:

- Goods purchased in Italy: 20,000 euro;
- Goods, services and labor purchased/acquired abroad: 50,000 euro.

The gross construction value pertaining to 2013Q1, to be allocated in Italy's BOP as constructions abroad - export with counterpart country B, is computed as follows:

$$(100,000 / 69 \text{ total days} * 59 \text{ days in the quarter}) = 85,507 \text{ euro}$$

The reported goods, services and labor purchased/acquired abroad are allocated as constructions abroad - import with counterpart country B. The reported goods purchased in Italy are deducted from the goods exports, again with partner country B, of the BOP. The complete recording for 2013Q1 is shown in the table that follows:

2013 Q1 BOP

	Export	Import
Constructions abroad	85,507	50,000
Goods	-20,000	

In 2013Q2 the enterprise does not purchase any input, neither in Italy nor abroad, thus, it has only to report the construction start and end dates, the counterpart country and the gross construction value. The construction value pertaining to 2013Q2, to be allocated the BOP as construction abroad - export with counterpart country B, is computed as follows:

$$(100,000 / 69 \text{ total days} * 10 \text{ days in the quarter}) = 14,493 \text{ euro.}$$

Hence, the BOP recording for 2013Q2 is the following:

2013 Q2 BOP

	Export	Import
Constructions abroad	14,493	

14.142. As mentioned, the above details are not collected for constructions in Italy, since the information is usually not available to the reporting enterprises receiving the service. In order to fill this information gap, an assumption is made that the cost structures of constructions abroad and in Italy are similar. Therefore, the missing information (i.e. the goods, services and labor purchased/acquired in Italy and the goods purchased in the country of residence of the construction firm) is estimated on the basis of the ratio of the symmetric items reported for constructions abroad to the gross construction value.

14.143. Table 14.11 shows the different sources used for each component of construction services. The constructions abroad - export and the constructions in Italy - import components are computed assuming that the gross construction value is uniformly distributed throughout the duration of the work. Italy is a net exporter of construction services; the gross value of constructions abroad (around 160 million euro annually, as an average in the period 2008-2012) largely exceeds that of constructions in Italy (around 40 million euro).

Table 14.11

Methodology for the compilation of the construction services item in Italy

	Export	Import
Constructions abroad	Total contract value pertaining to the reference quarter	Goods, services and labor purchased/acquired abroad
Constructions in Italy	Goods, services and labor purchased/acquired in Italy (estimated)	Total contract value pertaining to the reference quarter

14.144. *Constructions lasting one year or more.* Also in the case of constructions lasting one year or more the gross construction value is uniformly distributed throughout the entire duration of the work. The quota pertaining to the reference quarter is considered an increase of FDI equity stock (FDI abroad - or assets - in the case of construction abroad and FDI in the reporting economy - or liabilities - in the case of construction in the compiling country).

14.145. For constructions abroad, in the quarter in which the construction project ends, the reporting agent has to report the additional information on the net margin, i.e. the difference between the gross construction value and all costs incurred by the construction enterprise in relation to the project. For constructions in Italy, the net margin, which is not directly available to the reporting agent, is estimated by the compiler applying to the gross construction value the average rate of return observed for constructions abroad.

14.146. Consequently, in the BOP of the quarter in which the construction ends: (i) the gross construction value is recorded as FDI disinvestment (on the assets side in the case of constructions abroad, on the liabilities side in the case of constructions in Italy), since the construction is delivered to the client; (ii) the net margin is recorded as FDI income (on the credit side in the case of constructions abroad, on the debit side in the case of constructions in Italy).

Box 14.4

Example: measurement of construction FDI-related flows

A construction enterprise resident in Italy starts a construction project in economy B on the 1st of January 2012. The end date of the project is the 31st of December 2013. The gross construction value is 1,462 million euro. The project is considered as FDI, as it lasts more than one year (731 days).

The enterprise has to quarterly report the construction work in the eight TTN questionnaires referred to the periods from 2012Q1 to 2013Q4, specifying in each questionnaire the project start and end dates, the counterpart country and the gross construction value.

In the questionnaire referred to the quarter in which the work end occurs (2013Q4), the reporting agent has also to report the net margin, which amounts to 150 million euro.

In the quarterly BoPs, the following transactions will be registered:

- 2012Q1 - FDI Equity Assets - investments: $(1,462 / 731 \text{ total days} * 91 \text{ days in the quarter}) = 182 \text{ million euro}$
 - 2012Q2 - FDI Equity Assets - investments: 182 million euro
 - ...
 - 2013Q4 - FDI Equity Assets - investments: $(1,462 / 731 \text{ total days} * 92 \text{ days in the quarter}) = 184 \text{ million euro}$
- FDI Equity Assets - disinvestments: 1,462 million euro
FDI income credits: 150 million euro.

B.6. Insurance and pension services

B.6.a. Scope

14.147. Insurance and pension services cover the provision to non-residents of various types of insurance by resident insurance corporations, and vice versa. This section discusses the compilation of insurance and pension services flows in conformity with the MSITS 2010 and BPM6. The IMF Balance of Payments Compilation Guide provides recommendations on the treatment of financial assets and liabilities as well as service and income flows of insurance corporations and pension funds in its Appendix II “Insurance Transactions and Positions, Pension and Standardized Guarantees Schemes”. This Guide maintains, to the most possible extent, the consistency with its recommendations on service flows.

14.148. The MSITS 2010 recommends that insurance and pension services be disaggregated into four separate sub-components: direct insurance; reinsurance; auxiliary insurance; as well as pension and standardized guarantee services. Direct insurance is further broken down into life insurance, freight insurance and other direct insurance. Pension and standardized guarantee services is further broken down into pension services and standardized guarantee services.²⁶³

²⁶³ MSITS 2010, paragraph 3.149.

B.6.b. Direct insurance

14.149. Direct insurance comprises life insurance, freight insurance and other direct insurance. Their insurance services, provided to residents and non-residents, are derived by determining the output of the insurance in a way that mimics the accounting practices based on premiums earned and losses incurred pertaining to the accounting period:

	Gross premiums earned (from direct business)
<i>Plus</i>	Net income from investments attributable to policyholders (premium supplements)
<i>Minus</i>	Estimated claims incurred (adjusted for claim volatility, if necessary)
<i>Equals</i>	Insurance service charge ²⁶⁴

Box 14.5

Numerical example of direct insurance services

For resident insurers with separate data on policyholders abroad:	
Premiums earned from abroad	100
Claims payable abroad	.95
Income attributable to policyholders	20 (premium supplements)
Insurance service charge is	.25 [=100+20-95]

14.150. Regarding exports of insurance services, compilers can obtain most comprehensive data from surveying resident insurance enterprises, in countries that depend mainly on surveys for data collection (see Chapter 6 F (iv)).

14.151. Even if comprehensive survey is not feasible, compilers may be able to request information directly from domestic insurance corporations and calculate service amounts of insurance companies. If they can collect data on the breakdowns of premiums received from resident clients and those from non-resident clients, insurance services provided to non-residents can be calculated assuming that the service ratio is the same between resident and non-resident clients. Such a ratio could be used for estimating imports of insurance services if payments of insurance premiums are captured through general enterprise surveys. Nevertheless, compilers should be careful about possible difference between the ratio of domestic insurance corporations and that of foreign insurance corporations.

Box 14.6

Numerical example of exports of insurance services

For resident insurers with separate data on policy-holders abroad for premiums only:	
Total insurance services (to residents and non-residents combine)	50
Total premiums	200
Of which: Premiums from residents	120
Premiums from non-residents	.80
Estimated insurance services provided to non-residents are	20 [(80/200)*50]

14.152. Compilers, depending on the ITRS for data collection, may not be able to compile comprehensive set of accounts in order to approximate insurance services exports. However, from the ITRS, compilers obtain settlement data for insurance premiums received from abroad and insurance claims paid to abroad. Also, compilers obtain settlement data for

²⁶⁴ BPM6 Compilation Guide, appendix 2, paragraph A.2.37, p. 423.

insurance premiums paid to abroad and insurance claims received from abroad to estimate insurance services imports. Insurance services can be estimated by multiplying these data by a ratio of service charge. In doing so, premiums are a better indicator than claims for determining the service charge. The reason is that claims are contingent on events incurred to trigger payments, and there may be periods without claims or with regularly large claims. The ratio of insurance services need to fixed and revised periodically by means of checking financial reports of domestic insurance enterprises or direct inquiries to them. Compilers should be careful about possible difference between the ratio for resident clients and that for non-resident clients of insurance enterprises.

Box 14.7

Numerical example of imports of insurance services

Premiums from residents	40
Ratio of service charge to premiums (average from data on insurers abroad).	25 %
Estimated insurance services from non-residents	10 [40*0.25]

14.153. Major catastrophes that may require large payments of claims are expected to occur once in several years. When they do occur, the payments of claims in the year of the catastrophe could exceed the value of premiums. If only the claims incurred in the accounting period are used in the formula, the value of insurance services could be highly irregular and, in some cases, could even be negative. Therefore, an adjustment in claims due is required to reflect a more long-term view of claims behavior, in line with the decision-making process in the insurance industry. The adjustment for claims volatility shows the difference between the actual claims in the period and the normally expected value of claims, where the expected value of claims removes the effects of claims volatility. In periods when large values of claims are incurred, the adjustment, if it is to be made, would be negative, while in other periods the adjustment would be positive.²⁶⁵

14.154. Regarding the adjustment for smoothing the amounts of claims by policyholders on insurance corporations, expectation approach, accounting approach and sum of cost plus “normal profit” approach are proposed in the BPM6 (Appendix 6 c paragraph 22).

14.155. In the expectation approach, output is calculated as: premiums plus expected premium supplements minus expected claims. This approach consists in replicating the *ex ante* model used by insurer corporations to set their premiums, on the basis of their expectations. In accepting risk and setting premiums, insurers consider both their expectation of loss (claims) and of income (premiums and premium supplements). Ideally, the micro data from the accounts of the insurance corporations could be used for the expectation approach for estimating output of the insurance corporation but this information is seldom available to the statistical organizations. In the absence of such data, a statistical technique to simulate this approach can be applied by using macro statistics, and using smoothed past data to forecast the expected claims.

14.156. In the accounting approach, output is calculated as: actual premiums earned plus premium supplements less adjusted claims incurred; where adjusted claims are determined by using claims due plus the changes in equalization provisions and, if necessary, changes to own funds.

²⁶⁵ BPM6, appendix 6.c, paragraph A6c.21.

14.157. In the sum of cost plus “normal profit” approach, the output is calculated as the sum of costs (including intermediate costs, labor and capital costs) plus an allowance for “normal profit”.

14.158. *Direct life insurance.* Regarding life insurance, most providers operate domestically and their international transactions tend to be small in comparison to those of non-life insurance. Nevertheless, expatriates often maintain life insurance contracts with insurance corporations of their home countries and thus cross border payments of premiums are made. Also international insurance transactions can occur among neighboring countries.

14.159. Direct life insurance has three distinguishing features: the relationship between premiums and claims/benefits over time, the length of time for which the contract is written, and the certainty that a claim/benefit will occur. Practically, insurance enterprises determine the relationship between premium and benefit by combining saving element of a single policy with actuarial calculation of an insured population. Thus, the value of output of life insurance can be expressed with the following formula:

	Gross premiums earned
<i>Plus</i>	Bonuses (premium supplements)
<i>Minus</i>	Benefits due
<i>Minus</i>	Net increases in life insurance actuarial reserves
<i>Equals</i>	Life insurance services ²⁶⁶

14.160. The ITS source data and estimation methods of non-life direct insurance services can be mostly applied to those of life direct insurance services. In calculating and using ratios of life insurance service charges for estimation, changes in life insurance actuarial reserves need to be taken into consideration. Compilers depending on enterprise surveys for frequent data of life insurance need to estimate such changes separately if respondents provide the data on actuarial reserves only on an annual basis.

B.6.c. Reinsurance

14.161. Reinsurance is the main focus of international transactions of insurance services. To protect against large claims, insurance corporations enter into reinsurance contracts often with foreign insurance corporations. There are some payment transactions peculiar to reinsurance. Specifically, the primary insurance company remits to the reinsurer the net premium after deducting the so-called agreed upon ceding commission. This commission is paid by the reinsurer to reimburse the ceding company for its acquisition expenses and other costs incurred to place the business with the reinsurer. In contrast, profit commission (which is not deducted from premiums), is the case in which the reinsurer and the ceding company generally agree to a predetermined percentage of the profit realized by the reinsurer on the contracts ceded by the primary insurance companies and the cedants’ share of such profits.²⁶⁷ Thus, the value of output of reinsurer can be expressed with the following formula:

²⁶⁶ BPM6 Compilation Guide appendix 2, paragraph A.2.69. Alternatively, the service can be calculated as follows: total investment income earned on the life insurance technical reserves less the part of this investment income actually allocated to the policyholders and added to the insurance reserves (see 2008 SNA, paragraph 6.199).

²⁶⁷ BPM6 Compilation Guide, appendix 2, paragraphs A.254-A.255.

	Gross premiums earned less commission payable
<i>Plus</i>	net income from investments (premium supplements)
<i>Less</i>	claims due (adjusted for claim volatility, if necessary) and profit commission payable
<i>Equals</i>	reinsurance service charges

14.162. The ITS source data and estimation methods of other direct insurance services can be mostly applied to those of reinsurance services. In using ratios of reinsurance service charges, commission payable and profit commission need to be taken into consideration. Compilers depending on enterprise surveys for frequent data of reinsurance should prepare explanatory notes on treatment of these items in their survey forms.

B.6.d. Auxiliary insurance services

14.163. Auxiliary insurance services comprise transactions that are closely related to insurance and pension fund operation. Included are agents' commissions, insurance brokering and agency services, insurance and pension consultancy services, evaluation and adjustment services, actuarial services, salvage administration services and regulatory and monitoring services on indemnities and recovery services. Unlike other insurance and pension services, auxiliary services are billed through explicit charges.

14.164. According to MSITS 2010, which is based on classification by activity, auxiliary insurance services are included in insurance and pension services.²⁶⁸ This fact should not be confused with the sectoral classification applied in the SNA 2008, whereby insurance brokers and alike are classified under "financial auxiliaries."²⁶⁹

B.6.e. Country experience: United States

14.165. The U.S. method for measuring trade in insurance services most closely conforms to that outlined in example 4 in MSITS 2010.²⁷⁰ In addition to premiums minus a proxy measure of expected claims (actual claims payable with an adjustment for claims volatility), called normal losses, and premium supplements as outlined in table 14.12, the U.S. measure of insurance services also includes a measure of auxiliary insurance services. The U.S. measure includes separate estimates of trade in direct insurance and reinsurance. Although both this manual and BPM6 recommend estimating life and non-life insurance separately, the United States treats all direct insurance as non-life insurance because U.S. cross-border transactions in life insurance are thought to be insignificant.

14.166. The U.S. measure of trade in insurance services is compiled using data from a variety of sources. The main source is a survey of U.S. insurance companies. This survey, conducted by the Bureau of Economic Analysis (BEA), collects quarterly data on reinsurance premiums sold to and purchased from abroad and annual data on reinsurance claims paid and received, primary insurance premiums sold and claims paid, and auxiliary insurance services. Every 5 years, BEA conducts a benchmark survey of insurance companies to collect information on companies that fall below the reporting threshold on the quarterly survey. A separate survey of U.S. businesses, also conducted by BEA, collects data on primary insurance premiums purchased and claims received by non-insurance companies and

²⁶⁸ BPM6 paragraph 10.117; MSITS 2010, paragraph 3.184.

²⁶⁹ 2008 SNA, paragraph 4.112; BPM6, paragraph 4.80.

²⁷⁰ MSITS 2010, box III.7, page 61.

additional data on auxiliary insurance. Data on the income generated by insurance companies' reserves, used to calculate premium supplements, are from *Best's Aggregates and Averages: Property-Casualty* by A.M. Best Company.

14.167. The U.S. measure of insurance services includes three components: Premiums less normal losses, called 'risk-pooling services'; premium supplements; and auxiliary insurance. The calculation of risk-pooling services requires information on current premiums and a measure of what insurers expect their claims to be. Premiums are collected on BEA surveys as outlined above. The proxy measure for insurers' expected claims, called normal losses, is estimated by applying a ratio based on historical premiums and claims to current period premiums. This method assumes that insurance companies base current premiums on their expectation of current period losses and that their expectation of losses is based on their loss history.

14.168. The U.S. method assumes that insurance companies plan for two basic types of losses, regularly-occurring losses that occur every period and catastrophic losses that occur at infrequent intervals. Separate estimates are made for these two types of losses. To calculate separate estimates, catastrophic losses must be separated from regularly-occurring losses in the loss data reported by insurance companies. When a catastrophe such as a major hurricane occurs, the magnitude of the related loss is estimated using data from the survey of insurance companies and publically available reports from insurance companies impacted by the event. Losses other than catastrophic losses are considered regularly-occurring.

14.169. Expected regularly-occurring losses are estimated by applying to current period premiums a 6-year arithmetic moving average of each prior period's ratio of regularly-occurring losses to premiums. Loss data for the current period are not included in the average in order to achieve an ex ante concept of regularly occurring losses.

14.170. Because catastrophic losses occur much less frequently than regularly-occurring losses, they are assumed to affect loss expectations over a much longer period. To account for this, catastrophic losses are removed from current period losses, and spread over the 20 years following their occurrence in equal increments. Similar to regularly-occurring losses, expected catastrophic losses are estimated by applying to current period premiums a 6-year arithmetic moving average of the ratio of each prior period's share of catastrophic losses to premiums. Thus, only a small fraction of catastrophic losses is factored into each year's calculation of expected claims.

14.171. Normal losses are the sum of expected regularly-occurring and catastrophic losses. Separate estimates of normal losses are calculated for primary insurance and for reinsurance and for credits and debits. For the United States, the ratio of losses to premiums is lower for primary insurance than for reinsurance because administrative and financial intermediation services differ for these two types of insurance. Primary insurance is more retail in nature—selling and writing a large number of individual policies to customers—and, thus, may have higher administrative and other costs than reinsurance, which involves fewer, larger transactions between insurance companies.

14.172. Premium supplements are the measure of investment income that insurers earn on their technical reserves; technical reserves consist of prepaid premiums and reserves against outstanding losses and are considered the assets of policyholders rather than the insurance company. BEA does not directly collect information on the technical reserves of insurance companies on its surveys because it is deemed too burdensome for companies to report these

data. Due to the lack of data on technical reserves, it is not possible for BEA to use a relationship between investment returns and technical reserves to estimate premium supplements. As a result, BEA developed a ratio of expected investment gains to premiums and multiplies that by current premiums to estimate premium supplements. The ratio of investment income to premiums is from Best's Aggregates and Averages: Property-Casualty by A.M. Best Company. A.M. Best provides data on investment gains that are attributable to insurance transactions, as opposed to investment gains attributable to the insurers' own funds. The ratio is a weighted moving average of the previous ratios of actual investment gains to premiums. In the cross-border trade data, the expected investment gains-to-premiums ratio is estimated separately for primary insurance and reinsurance, in recognition of the fact that reinsurers may have different ratios of net gains to premiums than primary insurers. The different ratios may arise because reinsurers hold larger reserves than primary insurers or because reinsurers hold reserves for a longer period of time.

14.173. Once these ratios have been calculated, they are applied to the estimates of premium receipts for direct insurance and reinsurance obtained from BEA surveys to derive premium supplement receipts. Because similar data on investment income of foreign insurance companies are not available for payments, the ratio used for receipts is applied to the estimates of premium payments in order to estimate premium supplement payments.

14.174. The U.S. estimate of auxiliary insurance services covers items such as agents' commissions, actuarial services, insurance brokering and agency services, and salvage administration services. Data are collected on BEA surveys of insurance and non-insurance companies. Auxiliary insurance is a component of primary insurance; there are no auxiliary services associated with reinsurance.

Table 14.12
Methodology for Insurance Services in United States

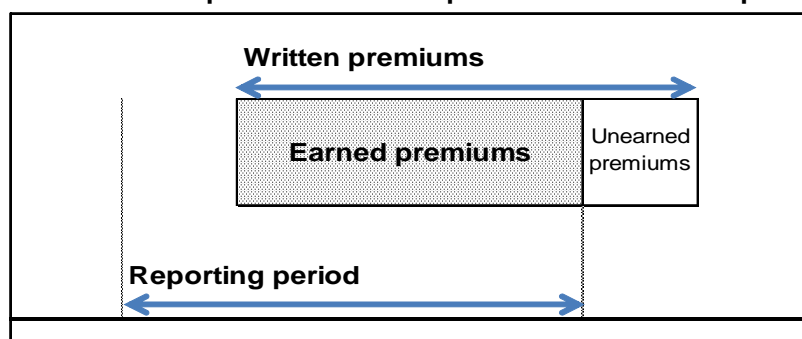
	2010	2011	2012
1 Primary insurance receipts (line 2 plus line 3 plus line 4)	1,090	1,575	1,350
2 Risk-pooling services (line 5 minus line 6)	825	1,200	1,015
3 Premium supplements (line 5 times line 9)	165	260	210
4 Services auxiliary to insurance (from survey)	100	115	125
Primary insurance supplementary information			
5 Premiums received (from survey)	1,500	2,000	1,750
6 Normal losses (line 5 times line 8)	675	800	735
7 Actual losses paid (from survey)	500	3,000	800
8 Normal loss ratio ¹	0.45	0.40	0.42
9 Premium supplement ratio ²	0.11	0.13	0.12
10 Catastrophic losses paid (from survey and public reports)	0	1,750	0
Non-services entries in balance of payments accounts			
11 Current transfers (line 6 minus line 7 plus line 10) ³	175	-450	-65
12 Capital transfers (line 10 with sign reversed) ³	0	-1,750	0
13 Income payments (line 3 with sign reversed) ³	-165	-260	-210
¹ Based on a 6-year moving average of premiums and losses, see paragraphs 14.57-14.61.			
² Based on a moving average of investment gains to premiums, see paragraph 14.63			
³ Negative sign denotes outflow from U.S. insurance company to foreign policy holder.			

14.175. *Accrual recording of insurance services.* In estimating insurance services in this manner, compilers need to pay attention to the difference between earned premiums and

written premiums and make necessary adjustments. The estimation should be based on earned premiums, which are consistent with accrual recording. At the time a policy is first written, the total of the premium may be unearned, as premiums are often fully paid at the inception of the policy. Direct written premiums are the amount charged to and actually paid over the life of a contract by the policyholders for insurance coverage. Each day thereafter, the premium amount accrues to the insurance unit until the end of the policy. At the end of reporting period, the insurance corporation assesses the premiums reserves representing the unexpired terms of the policy. The earned premiums plus the unearned premium for a policy equals the written premium.²⁷¹

Figure 14.2

The relationship between earned premiums and written premiums



B.6.f. Country example of Japan

14.176. Insurance services have probably been one of those most affected by measurement problems. Especially, since Japan employs an ITRS as a major data source, recording insurance services on an accrual basis has been challenging. To deal with this problem, Bank of Japan (BOJ) adjusts ITRS data in implementing a method that most closely conforms to that outlined in example 3 in the box III. 7 of MSITS 2010; the method measures insurance services by multiplying actual premiums earned by the insurance service ratio.

14.177. Since an ITRS captures premiums actually paid rather than actual premiums earned, premiums that cover the risks incurred during the accounting period, data are adjusted under following assumption. That is, BOJ assumes that insurance premium payables cover 12 months risks, and as insurance premiums are generally paid at an inception of a policy, actual premiums earned are calculated by equally allocating premiums in subsequent 12 months (figure 14.3). This adjustment is made for other direct insurance and reinsurance.²⁷²

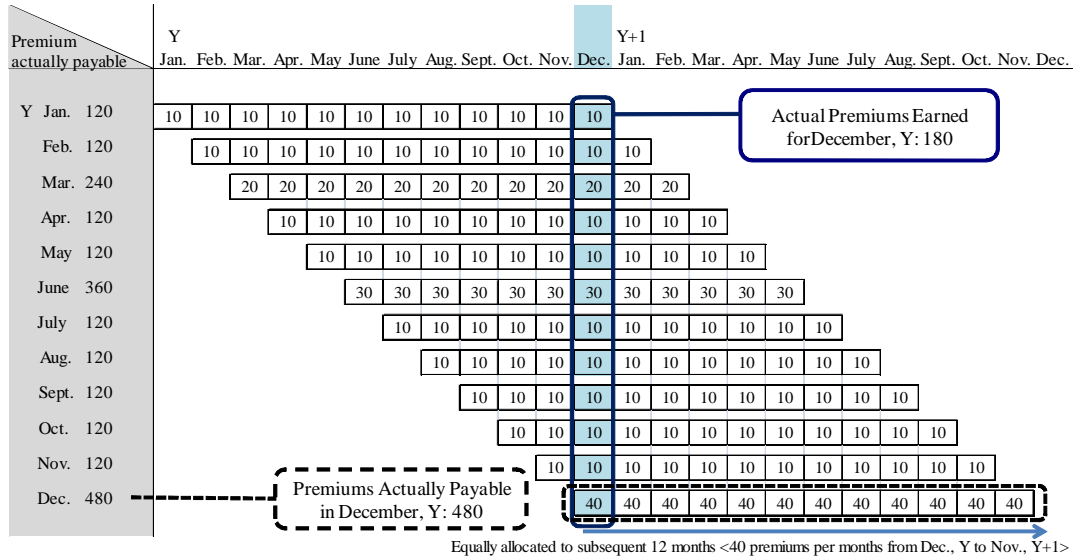
14.178. The insurance service ratio for other direct insurance and reinsurance, which is the ratio of service charges to gross premiums earned, are estimated from resident nonlife insurance companies' financial statement and applied to both imports and exports. Operating and administrative expenses are regarded as costs for providing insurance services, and service ratio is estimated by dividing aggregated operating and administrative expenses by corresponding premiums. This ratio is fixed for a year, and is updated when new financial

²⁷¹ BPM6 Compilation Guide, appendix 2, paragraph A.2.9.

²⁷² Since freight insurance policies cover a single contract, which is usually a short-term, the same adjustment is not applied to freight insurance premiums. Life insurance and pension services are excluded from estimating services, as cross border life insurance and annuity contracts are negligible in Japan.

statements become available. The insurance service ratio for freight insurance is captured separately and obtained from resident insurance companies.

Figure 14.3
Estimation of actual premiums earned



14.179. Multiplying the service ratio and monthly actual premiums earned,²⁷³ insurance services are calculated. Premium supplements are regarded as zero, as retained incomes for nonlife insurance reserves are negligible. Claims are recorded when paid, under secondary income for normal claims and under capital transfer for high claims when catastrophic events occurred.

Box 14.8

Numerical example of actual premiums received and claims paid to non-residents

Actual premiums received for December, Y	180
Insurance service ratio for year Y	40%
Claim paid to non-resident in December, Y	85
Insurance service (export)	72 (=180*40%)
Secondary income (credit, net premiums earned)	108 (=180-72)
Secondary income (debit, claim paid to non-resident)	85

14.180. This method is likely to stabilize outputs. Compared with a simple cash-based method, which is premiums minus claims, volatility of the outputs is substantially reduced. More importantly, negative figures, which are mainly due to lumped claims, are avoided.

²⁷³ Freight insurance premiums receivable on both exported and imported goods are obtained through direct report from resident nonlife insurance companies. Corresponding value of imported goods are also reported for deriving premium ratio. Freight insurance premiums paid from resident to non-resident on imported goods are estimated by excluding those earned by resident insurance companies from the total value. The total value is derived by multiplying premium ratio on imported goods to total value of imports.

B.6.g. Pension services and standardized guarantee services

14.181. Regarding Pension services, there may be explicit and implicit service charges. If the charges are implicit, their measurement is similar to that for life insurance. In the case of pension funds, the amounts paid by corporations and/or employees are termed “contributions”, while the amounts accruing to the employees are generally described as “benefits”. Pension actuarial reserves can be termed “pension entitlement”. Thus, the value of output of pension funds can be expressed with the following formula:

	Gross contributions
<i>Less</i>	benefits payable
<i>Plus</i>	contribution supplements
<i>Less</i>	Increased (Plus: Decreased) pension entitlements
<i>Equals</i>	pension service charges

14.182. The estimation methods of other direct insurance services can be mostly applied to those of pension services. In calculating and using a ratio of pension service charges for estimation, changes in pension entitlements need to be taken into consideration. Compilers depending on surveys on pension funds for frequent data of pension services need to estimate such changes separately if respondents provide the data on pension entitlements only on an annual basis.

14.183. Although the 2008 SNA recommends that pension fund managers, (or more precisely, administrators of pension funds, which only manage the activities of pension funds without taking ownership of the assets or liabilities), be classified as financial auxiliaries,²⁷⁴ the MSITS 2010 does not recognize fees paid to administrators of pension funds as a separate category under pension fund auxiliary services. However, such fees are different in nature from other pension funds services; therefore, pension fund auxiliary services should be separately identified, where such services are important. Such a treatment would be consistent with the treatment of fees paid to providers of auxiliary insurance services.

14.184. Standardized guarantee services are services related to standardized guarantee schemes which represent a class of identical financial guarantees (that is, similar types of credit risks) that are issued in large numbers, usually small amounts. They constitute arrangements whereby one party (the guarantor) undertakes to cover the losses of the lender in the event that the borrower defaults. Either the borrower or the lender may contract with the guarantor or repay the creditor if the debtor defaults. The guarantors are generally government units of financial corporations, usually insurance companies. A guarantor working on a commercial basis who charge fees, meet claims and earn investment income functions similarly to those in the field of non-life insurance. Thus, the value of the output of standard guarantee providers can be expressed in the same manner as that of non-life direct insurance. The estimation methods of non-life direct insurance services can be mostly applied to those of standard guarantee providers.

B.6.h. Country Example of Germany

14.185. *Calculation of Insurance imports.* In Germany, there is a lack of any kind of administrative data for compiling imports of insurance services. Therefore the data available from the external sector statistics are those to be used and are immediately available on a

²⁷⁴ SNA 2008, paragraph 4.112.

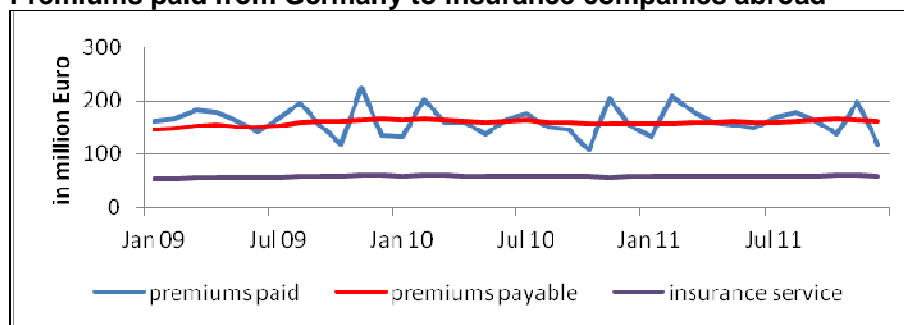
monthly basis. They are, however, not detailed enough and need to be supplemented by several types of estimates:

- i. Adjustments for premiums paid to premiums payable
- ii. Estimates for premium supplements
- iii. Estimates for changes of insurance technical reserves
- iv. Estimates on the stock of insurance technical reserves.

14.186. The first step is to smooth the premiums paid, which are relatively volatile, to premiums payable by using a 12 months moving average. The decision is related to the fact that premiums usually are paid in advance for one year. The second step is to apply the ratio of premiums earned to service derived from the export side to the smoothed premiums of the import side, which is in line with suggestions of BPM 6.

Figure 14.4

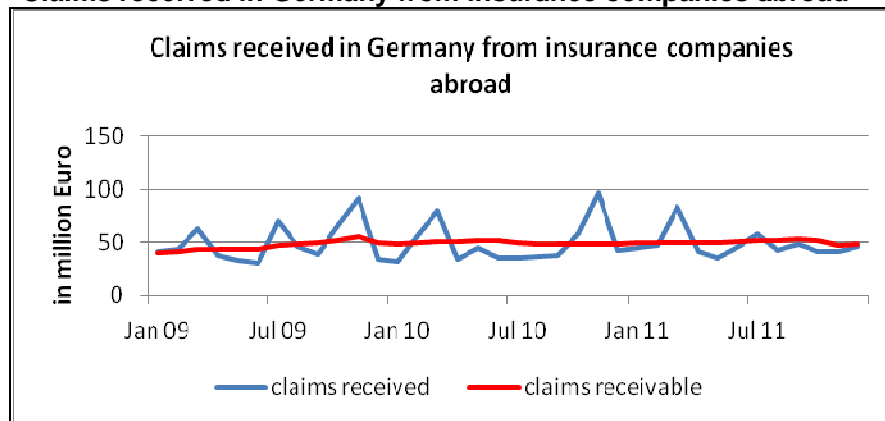
Premiums paid from Germany to insurance companies abroad



14.187. *Premiums received but not yet earned.* The technical reserves represent the amounts identified by insurance companies to account for prepayments of premiums and claims occurred, but not yet paid. Germany intends to use the same approach as for smoothing premiums paid to premiums payable for the two components which contribute to the development of technical reserves, the premiums paid to insurance companies abroad and the claims received. If the premiums paid are bigger than the premiums payable the technical reserves increase, if it is the other way round, they decrease.

Figure 14.5

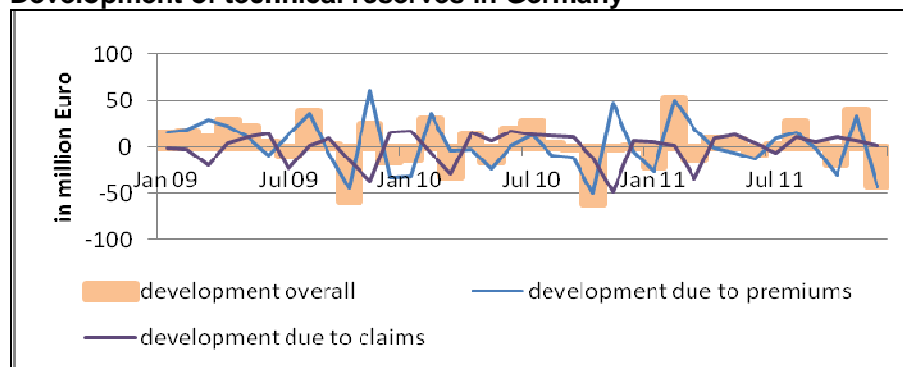
Claims received in Germany from insurance companies abroad



14.188. If the claims received are bigger than the claims receivable the technical reserves decrease, if it is the other way round, they increase. The sum of the changes of technical reserves will have to be recorded in the financial account.

Figure 14.6

Development of technical reserves in Germany



14.189. There is still a need to estimate premium supplements as the interest on technical reserves. There are two ways to make this calculation, namely (1) calculation interest on the estimated stock of technical reserves or (2) applying a ration on the premiums payable derived from the export side. Germany's intention is to make use of the second possibility since it is immediately available.

B.7. Financial services

B.7.a. Scope

14.190. Financial services²⁷⁵ cover financial intermediation and auxiliary services, except those of insurance corporations and pension funds. These services include those usually provided by banks and other financial intermediaries and auxiliaries. The compiler should note that financial intermediaries collect funds from lenders and transform or repackage them (with respect to maturity, scale, risk and the like) in ways that suit the requirements of borrowers; a financial intermediary does not simply act as an agent for these other institutional units, rather, it places itself at risk by acquiring financial assets and incurring liabilities on its own account.

14.191. Financial services include services provided in connection with transactions in financial instruments, as well as other services related to financial activity, encompassing, inter alia, deposit taking and lending, letters of credit, credit card services, commissions and charges related to financial leasing, factoring, underwriting and clearing of payments. Also included are financial advisory services, convenience services, liquidity provision services, risk assumption services other than insurance, merger and acquisition services, credit rating services, stock exchange services and trust services.

14.192. Financial services may be charged by: explicit charges; margins on buying and selling transactions; asset management costs deducted from property income receivable, in the case of asset-holding entities; or margins between the interest rate and the reference rate on loans and deposits, which are referred to as financial intermediation services indirectly

²⁷⁵ MSITS 2010, paragraph 3.190.

measured (FISIM). In EBOPS 2010, FISIM is an independent category separated from all other financial services.

14.193. For many financial services, explicit fees are charged, thus estimation does not require any special calculation. They may be derived either from an ITRS or from bank statements. Surveys on financial claims on and liabilities to non-residents may also collect the explicit fees charged on financial transactions in these instruments.²⁷⁶

B.7.b. Country experience: Japan in estimating margins on buying and selling transactions

14.194. Dealers implicitly charge services by incorporating a spread between their buying and selling prices. Japan will estimate margins on debt security transactions by multiplying their "transaction volumes" by corresponding "spread ratios." "Transaction volumes" and "spread ratios" are estimated as follows.

14.195. In most cases, a resident dealer exports services through inward investment transactions. Correspondingly, a resident investor imports services through outward investment transactions.

14.196. Therefore, Japan assumes that export of services occurs only in inward investment, and that import of services occurs only in outward investment. Some inward (outward) investment transactions are conducted with non-resident (resident) dealers and such transactions are excluded. Volumes (sum of buying and selling transactions) of inward investment and outward investment by type of securities are obtained from direct reports from financial institutions and ITRS.

Table 14.13

Numerical example from Japan of exports involving margins on buying and selling

Bid price for 10Y JGB Ask price for 10Y JGB	101.675 101.695
\Rightarrow Mid-price $[(bid + ask) / 2]$:	101.685
\Rightarrow Spread $[(ask - bid) / mid]$:	0.01%

(billion yen, %)

Country of investor	Transaction Volume (Inward Investment)			Spread on JGB (d)	Margin (c) x (d)
	Credit (a)	Debit (b)	Total (c) = (a) + (b)		
A	65,000	17,000	82,000	0.01%	8.2
B	1,800	25,000	26,800	0.01%	2.68
C	9,000	5,000	14,000	0.01%	1.4
D	16,000	2,000	18,000	0.01%	1.8
Total	—	—	—	—	14.08

²⁷⁶ BPM6 Compilation Guide, paragraph 12.106, page 292.

Table 14.14

Numerical example from Japan of imports involving margins on buying and selling
(billion yen, %)

Country of issuer	Transaction Volume (Outward Investment)			Spreads on government bonds (d)	Margin (c) x (d)
	Credit (a)	Debit (b)	Total (c) = (a) + (b)		
E	1,000	1,500	2,500	0.04%	1.0
F	1,500	2,700	4,200	0.05%	2.1
G	7,000	1,800	8,800	0.03%	2.64
H	9,000	2,000	11,000	0.01%	1.1
Total	—	—	—	—	6.84

14.197. A Spread ratio is the difference (as a ratio) of an ask-price and a mid-price, where a mid-price is the average of an ask-price and a bid-price. A spread ratio varies by every transaction, but there is no perfect data source. Given that, Japan picks up most common products and uses their spread ratios for approximation. For inward investment (export of service), spread ratios of Japanese Government Bonds (JGB) are used. For outward investment (import of service), spread ratios of six major countries' government securities that account for majority of outward portfolio investment are used and are applied to investment in corresponding countries. As they are significantly different, spread ratios of short-term securities and spread ratios of long-term securities are separately majored. Data are obtained from Bloomberg.

B.8. Financial services indirectly measured (FISIM)

B.8.a. Scope

14.198. FISIM applies only to loans and deposits, and only when those loans and deposits are provided by, deposited with, financial corporations. Financial corporations may generate FISIM even if they have only loans or only deposits. For instance, a credit card issuer that raises all of its funds by debt securities can earn FISIM on its loans to credit card customers. FISIM²⁷⁷ is calculated as follows.

- i. For loans from financial corporations, it is the difference between the interest actually payable on loans and the reference rate.
- ii. For deposits with financial corporations, it is the difference between the reference rate and the interest actually earned.
- iii. The reference rate should contain no service element and should reflect the risk and maturity structure of deposits and loans.

14.199. Against the background of interpretive difficulties of 2008 SNA regarding FISIM estimation, in particular on the choice of a reference rate, and the impact of recent financial

²⁷⁷ The legal framework within the European System of Accounts is articulated by the commission Regulation (EC) No 1889/2002 of 23 October 2002 on the implementation of Council Regulation (EC) No 448/98 completing and amending Regulation (EC) No 2223/96 with respect to the allocation of financial intermediation services indirectly measured (FISIM) within the European System of national and regional Accounts (ESA). See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:286:0011:0012:EN:PDF>.

crisis on FISIM estimation, the ISWGNA Task Force on FISIM was organized. Discussions on FISIM estimation took place at its first meeting in 2011 and further discussions were held by the Advisory Expert Group (AEG) on National Accounts in April 2012 and in May 2013. Meanwhile, the OECD Working Party on National Accounts meeting in October 2012 envisaged an assessment made by Eurostat of national simulations of various reference rates.

14.200. The following lists the key recommendation agreed in the May 2013 AEG meeting:²⁷⁸

- i. For estimating imports and exports of FISIM, FISIM should be calculated by at least two groups of currencies (national and foreign currencies). The reference rate for a specific currency need not be the same for FISIM providers resident in different economies
- ii. Liquidity transformation services should remain part of FISIM and that there should be a single temporal reference rate used to determine FISIM
- iii. The calculation (definition) of the reference rate should be determined according to national circumstances, using preferably any of the following approaches:
 - a. a reference rate based on a single observable exogenous rate for a specific instrument, such as interbank lending rates
 - b. a reference rate based on a weighted average of observable exogenous rates of maturities with different terms (weighted by the stock of loans and deposits in each maturity) or
 - c. a weighted average of the endogenous interest rates on loans and deposits
- iv. During periods of volatile movements in reference rates and when liquidity markets begin to dysfunction, considerable care should be taken in determining FISIM estimates. These periods may be characterized by negative FISIM estimates, particularly for depositors, but also for borrowers. When such incidences occur, countries are encouraged to review the applicability of the underlying reference rate for that period to calculate FISIM.
- v. Research continues to develop the conceptual arguments pro and con excluding credit default risk (CDR), and to develop methods and data that could support a possible exclusion of CDR in the future.

14.201. Thus, a single reference rate, which is calculated by one of above three approaches, should be used for transactions in national currencies and another reference rate (or rates) calculated similarly should be used for foreign currencies.

14.202. Estimate of cross-border FISIM can be calculated from data on the international investment position or from banking data on deposits and loans from financial corporations, in conjunction with the amounts of actual interest payable and receivable and reference interest rates. For economies where cross-border FISIM is small, it can be measured with relatively simplified methods based on aggregated data.

14.203. In cases where calculation of FISIM is negative, for practical reasons, the compiler may assume the value is zero (e.g., if calculated FISIM exports are -100, the figure of zero is

²⁷⁸ See <http://unstats.un.org/unsd/nationalaccount/aeg/2013/m8-2.asp>.

recorded in the ITS statistics).²⁷⁹ Alternatively, the compiler may wish to convert signs and regard negative exports as positive imports and vice-versa (e.g., if calculated FISIM exports -100, +100 is recorded as FISIM imports in the ITS statistics).

B.8.b. Country experience: Estonia

14.204. For Estonia, external FISIM has a relative small importance in relation to internal FISIM. This is due to the fact that most of the banking sector belongs to foreign banks and loan resources for local economy are made available through interbank transactions. The latter form the overwhelming majority in external transactions of loans and deposits. Having considered the size of the external FISIM, cost-effective approach and simplifications have been taken into compilation practice instead of additional data collection with increase of burden for data providers.

14.205. The compilation process is based on the stock and interest income figures that are available through the balance of payments surveys and banking statistics. In order to compile FISIM, the average interbank rate is needed to calculate and apply for stock figures. FISIM is the difference between the interest actually charged and the adjusted interest or vice versa, depending on the lender or borrower point of view.

14.206. For stocks data, the balance of loans and deposits is needed. In case of the assets related to loans and liabilities related to deposits, stock data are needed only for institutional sectors S.122 and S.125.

14.207. The main difficulty arises due to the fact that assets and liabilities between financial intermediaries should be excluded from the stock data. Therefore, the counterpart data have to be taken into account while determining the stock from which FISIM is derived. This does not concern banking sector statistics that already have data by counterpart sectors. For other financial intermediaries (S.125), no loans data are available by counterpart sectors or the data are too aggregate level (leasing companies). Compilation of stocks for S.125 includes the assumption that they have loan liabilities against financial intermediaries. On the asset side of loans at the moment, all stocks of S.125 have been taken into account, reflecting also those with other financial intermediaries.

14.208. Another issue concerns stock data of households where the main data source is the ITRS. The use of ITRS does not give a good indication about the positions. One of the solutions to tackle the issue is to use mirror data i.e. other countries banking sector statistics by counterpart sector. However, households sector still remains on the estimation level.

14.209. Reference rate is derived by using credit institutions report on the balance of loans and resources from which the stocks against non-residents financial intermediaries are taken by currencies and by maturities. Each stock is multiplied by the corresponding contractual interest rates from the same reports. The amounts to be paid or received are then divided by the stocks. The result from this compilation represents average weighted interbank rate which is used as a reference rate.

14.210. Before multiplying stocks with reference rate, both the stocks and unadjusted interest income are distinguished by counterpart sectors. The process is taken on in order to exclude the stocks and interest income between financial intermediaries. Data by counterpart

²⁷⁹ BPM6 Compilation Guide, appendix 3, A3.15.

sectors for both items could be derived by using credit institutions report on the balance of loans and resources. However, the stocks and income could not be divided for other financial intermediaries due to the lack of proper data sources.

14.211. Experiences up to the present indicate that preconditions still exist to eliminate stocks and income between financial intermediaries properly. Therefore, data sources have to include data by currencies and by counterpart sectors also for other financial intermediaries. For households sector further estimations for stocks is needed to be developed. Estimations were needed to add in case negative FISIM. Usually it happened due to huge transactions in deposits by general government sector where the stocks in both the beginning and the end of the period were zero while at the same time interests were earned. In order to keep a cost-effective approach to data providers, detailed sectorised data requirement in different currencies have not been applied. Instead the weighted average reference rate itself reflects the weights of the currencies and maturity while implementing it for stocks by maturities.

B.9. Charges for the use of intellectual property

B.9.a. Scope

14.212. This EBOPS 2010 component²⁸⁰ covers :

- i. Charges for the use of proprietary rights, such as patents, trademarks, copyrights, industrial processes and designs, trade secrets, and franchises, where rights arise from research and development, as well as from marketing;
- ii. Charges for licenses to reproduce and/or distribute intellectual property embodied in produced originals or prototypes, such as copyrights on books and manuscripts, computer software, cinematographic works and sound recordings, and related rights, such as for the recording.

14.213. *A two-stage production process.* The production of books, recordings, films, software, disks, etc., is a two-stage process, of which the first stage is the production of the original and the second stage, the production and use of copies of the original. The output of the first stage is the original itself over which legal or de facto ownership can be established by copyright, patent or secrecy. The owner of the asset may use it directly to produce copies that give the purchaser the right to use. Alternatively, the owner may license other producers to reproduce and distribute the content.

14.214. One of the most important sources for estimating payments and other related charges for the use of intellectual property products is business surveys (collected as license fees, royalties and other fees under various licensing agreements). If relevant, the survey may be designed to collect data separately on various types of licensing agreements, such as unilateral licensing, cross-licensing³⁴ or patent pools³⁵. All types involve an agreement by the owner of a patent (licensor) to allow another party (licensee) to use, or reproduce and sell a patented invention without transferring the ownership. The globalization survey for multinational enterprises conducted by OECD countries is considered a suitable source for international transactions to be reported under charges for the use of intellectual property, if it provides separate data on international flows of intellectual property products are collected.

²⁸⁰ MSITS 2010, paragraph 3.214.

14.215. Depending on their relevance for the economy, separate surveys by type of intellectual property products may be undertaken (i.e., separate surveys for computer, research and development or audiovisual), as such industries have a completely different functioning.²⁸¹

B.10. Telecommunications, computer and information services

B.10.a. Scope

14.216. The services covered in this EBOPS component are defined as follows:²⁸²

i. *Telecommunications services* cover the broadcast or transmission of sound, images, data, or other information by telephone, telex, telegram, radio and television cable transmission, radio and television satellite, electronic mail, facsimile, etc., and includes business network services, teleconferencing and support services. It does not include the value of the information transported. Also included are mobile telecommunications services, Internet backbone services and online access services, including the provision of access to the Internet. Excluded are installation services for telephone network equipment (included in construction), and database services (included in information services);

ii. *Computer services* consist of hardware- and software-related services and data processing services. EBOPS 2010 recommends the breakdown of computer services into computer software (with a sub-item “software originals”) and other computer services. The compiler should be aware that some forms of software are classified under goods²⁸³ and that EBOPS also proposes a complementary grouping - computer software transactions, covering all transactions relating to computer software, be it services or goods transactions (see paragraphs 3.292-3.293);

iii. *Information services* are divided into news agency services and other information services:

- a. News agency services includes the provision of news, photographs and feature articles to the media, and
- b. Other information services includes database services, such as database conception, data storage, and the dissemination of data and databases (including directories and mailing lists), both online and through magnetic, optical or printed media and web search portals (encompassing search engine services that find Internet addresses for clients who input keyword queries). Also included are: direct non-bulk subscriptions to newspapers and periodicals, whether by mail, electronic transmission or other means; other online content provision services; and library and archive services. (Bulk newspapers and periodicals are included under general merchandise.) Downloaded content that is not software or an audio-visual or related product is included in information services. It should be noted that the downloaded content, that is not software or an audio-visual or related product, is included in information services.

²⁸¹ BPM6 Compilation Guide, paragraph 12.123, pages 296-297.

²⁸² For details see MSITS 2010, paragraphs 3.221 – 3.232.

²⁸³ See MSITS 2010, Table III.1 and paragraphs 3.216-3.220.

An enterprise survey or an ITRS could be used to compile this item. Care should be taken to ensure the gross reporting of transactions.²⁸⁴

B.11. Other business services

B.11.a. Scope

14.217. EBOPS 2010 identifies three sub-components of other business services²⁸⁵: research and development services, professional and management consulting services and technical, trade-related and other business services. Scope of these sub-components can be outlined as follows²⁸⁶:

- i. *Research and development services* cover those services that are associated with basic research, applied research and experimental development of new products and processes and covers activities in the physical sciences, the social sciences and the humanities²⁸⁷. The definition used in MSITS 2010 includes other testing and other product development that may give rise to patents. To reflect this difference in coverage, EBOPS 2010 recommends a breakdown of research and development services into two sub-groupings: *work undertaken on a systematic basis to increase the stock of knowledge* (reflecting the coverage of research and development within a 2008 SNA context) and *other*;
- ii. *Professional and management consulting services* include legal, accounting, management consulting, and public relations services, advertising, market research and public opinion polling services;
- iii. *Technical, trade-related and other business services* cover architectural, engineering, scientific and other technical services; waste treatment and de-pollution, agricultural and mining services; operating leasing services; trade-related services; and other business services.

B.11.b. Country experience: Austria

14.218. In Austria, the basic business survey,²⁸⁸ conducted by Statistics Austria and the OeNB, respectively, covers trade in ‘Other business services’ (OBS) in detail. The structure of OBS follows mainly the EBOPS classification according to MSITS 2010:

- i. Research and development services
 - a. Work undertaken on a systematic basis to increase the stock of knowledge
 - Provision of customized and non-customized research and development services

²⁸⁴ BPM6 Compilation Guide, table 12.4, page 287.

²⁸⁵ MSITS 2010, paragraph 3.233.

²⁸⁶ See MSITS 2010, paragraphs 3.234 – 3.252 for details of inclusions and exclusions.

²⁸⁷ It should be noted that the definition of research and development services used here, and in CPC, Version 2, is wider than the Frascati Manual definition (which is used to define the scope of capital formation in the 2008 SNA).

²⁸⁸ Details about the design of the Austrian survey (such as population coverage, scope, frequency, coordinators, and use of additional information provided by administrative data sources, etc.) are given in Chapter 6 paragraphs 6.56-6.62.

- Purchase and sale of property rights to research and development results
 - b. Other research and development services
- ii. Professional services and business management consulting services
 - a. Legal services, accounting, auditing, business management consulting and public relations
 - Legal services
 - Auditing, bookkeeping and tax consultancy
 - Business management consulting and public relations
 - b. Advertising, market research and public opinion polling
- iii. Technical, trade-related and other business-related services
 - a. Architectural, engineering, scientific and other technical services
 - Architectural services
 - Engineering services
 - Scientific and other technical services
 - b. Waste treatment and depollution, agricultural and mining services
 - Waste treatment and depollution
 - Agricultural, forestry and fishing services
 - Mining support service activities
 - c. Operational leasing services
 - d. Trade-related services
 - e. Other business-related services

14.219. Exports of Research and development services associated with basic research, applied research and experimental development of new products and processes had developed rather dynamically until the outbreak of the financial crisis in 2007. In the years following, exports have resumed growth but rather along a mixed path. Linking reported trade flows with enterprise characteristics reveals that most part of export revenues from R&D can be attributed to companies that are part of an international group, mainly bridgeheads, i.e. foreign-controlled resident investors that are part of a multinational group and that have subsidiaries abroad themselves. Despite the fact that these companies are few in numbers, the research and development centers that they run in Austria are very important for the creation of value added. The reporting population as well as the results of the business survey on exports and imports of R&D services is tested with the survey on research and experimental development in Austria, which follows the lines of the OECD's Frascati Manual. The broader definition of the MSITS 2010 also accounts for other testing and other product development that may give rise to patents.²⁸⁹ Sales of proprietary rights have already been reported according to BPM5. With the introduction of BPM6 and MSITS 2010 respectively, reports had to be adjusted for sales of carbon emission rights to account only for results of research and development. Some trade flows reported by manufacturing industries had to be reclassified from R&D to technical services to account for the distinction necessary between R&D services on the one hand and Scientific and other technical services on the other.

14.220. In contrast to R&D services, exports of Legal services as well as of Auditing, bookkeeping and tax consultancy are dominated by local companies in Austria. With

²⁸⁹ MSITS 2010, paragraphs 3.234-3.239.

business management consulting and public relations as well as advertising, market research and public opinion polling in particular, exports of companies that are part of an international group are by means far more important. According to general observations enterprises often include management fees between related parties when they report Legal services, accounting and auditing services.²⁹⁰ In Austria also a rise in reports on Auditing, bookkeeping and tax consultancy has been observed with the introduction of BPM6 but still these services are of minor importance in absolute terms. What can be observed is that Austrian banks are organizing these kinds of services for their subsidiaries in Eastern Europe, but can well separate them from general management fees.

14.221. In the context of compiling Trade in services according to BPM5 and MSITS 2002, Architectural, engineering, and other technical services were defined in line with the SNA 1993. Accordingly, technical services included all kind of assembling and repair services not delivered by construction enterprises. With the introduction of MSITS 2010 and SNA 2008, assembly works in the course of plant engineering are still included in Engineering services, whereas repair works – other than repair of buildings and computers - are now part of Services for maintenance and repair n.e.c.²⁹¹

14.222. Trade in Waste treatment and depollution, agricultural and mining services is of minor importance in Austria. Companies active in agriculture and forestry are not surveyed in the course of the general business survey for compiling Trade in services, but the results of three other surveys are used as secondary statistical information: i) Regional surveys of Austrian forestry enterprises in the framework of the annual wood harvest statistics of the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management recording the amount of wood harvested by non-resident enterprises; ii) Survey of Austrian wood harvesting companies by the Federal Research and Training Centre for Forests, Natural Hazards and Landscape recording information about the wood harvesting work performed abroad; iii) Survey of the Austrian forestry management agency (Österreichische Bundesforste AG) by Statistics Austria. The information provided in these surveys is given in solid cubic meters of wood. Using conversion factors provided by the University of Natural Resources and Life Sciences in Vienna, these data are converted into monetary values. The annual values calculated from these data are evenly distributed among the four quarters of the year and revised after new information has become available the following year.

14.223. According to MSITS 2010, Operational leasing includes the renting of produced assets including leasing of machinery, equipment and buildings as well as chartering of ships, aircraft and other means of transportation without crew.²⁹² Depending on the principle of economic affiliation, Operational leasing refers to transactions only where the asset is economically assigned to the lessor who bears the risks and benefits associated with ownership. On the contrary, Financial leasing involves the transfer of risks and benefits to the lessee – often in connection with an agreed option to buy – and is defined as a financial transaction, i.e. a loan according to BPM6.²⁹³ In the course of quality checking the results of the Trade in services survey, data on Operational leasing are cross-checked with data on financial transactions and the reporting enterprises are categorized according to their specific sector of industry; i.e., either real or financial sector.

²⁹⁰ MSITS 2010, paragraph 3.241.

²⁹¹ Ibid., paragraphs 3.78-3.79.

²⁹² Ibid., paragraphs 3.246-3.249.

²⁹³ BPM6, paragraphs 5.56-5.60.

14.224. Trade-related services refer to merchants, commodity brokers, dealers and others who charge commissions on goods and service transactions like sales of ships and aircraft.²⁹⁴ These services have to be distinguished from brokerage on financial instruments, which is included in financial services. Statistics Austria reviews reports on Trade-related services by looking at the industrial sector of the reporting enterprise and by linking results with those of the SBS on wholesaling on a fee or contract basis (NACE group 51.1), who charge only for their service as intermediaries.

14.225. Other business services n.i.e. include a variety of different service items, ranging from distribution of water, steam and gas to real estate services and management fees.²⁹⁵ Services that cannot be classified according to any other services category are also included. Therefore, Statistics Austria checks the survey results on this item by taking into account the industrial sector which has been attributed to the reporting enterprise to determine if activities of the enterprise relate to other business services or if the data reported could be disaggregated further. With the changeover from BPM5 to BPM6 and the reclassification of “services between related enterprises, n.i.e” (from other business services n.i.e. to a separate complementary grouping of “total services transactions between related enterprises”)²⁹⁶, Statistics Austria and the OeNB had to ensure that results on Other business-related services were not inflated by reports formerly categorized as services between related enterprises. For this purpose the two institutions contacted those enterprise formerly reporting services between related enterprises to investigate the content of the data. Where possible, enterprises were asked to break down the data themselves and attribute the transactions to single service categories according to EBOPS 2010. Where this was not possible, the compilers, together with the reporters, either agreed on a single service category to which such transactions could be mainly attributed (e.g., to Auditing, bookkeeping and tax consultancy, Business management consulting and public relations or Computer services), or they were attributed to the service category to which the industrial sector of the enterprise mostly relates.

B.12. Personal, cultural, and recreational services

B.12.a. Scope

14.226. EBOPS 2010 component *Personal, cultural, and recreational services* comprises two sub-components²⁹⁷: (i) audio-visual and related services and (ii) other personal, cultural, and recreational services:

i. Audio-visual and related services covers services associated with audio-visual activities (movies, music, radio and television) as well as services relating to the performing arts. The coverage of this EBOPS item is therefore broader than that of CPC, Version 2, group 961 (“Audio-visual and related services”) and includes artistic related services (corresponding to CPC, Version 2, group 962 (“Performing arts and other live entertainment event presentation and promotion services”) and group 963 (“Services of performing and other artists”);

ii. *Other personal, cultural, and recreational services* cover health services, education services, heritage and recreational services and other personal services.

²⁹⁴ MSITS 2010, paragraphs 3.250-3.251.

²⁹⁵ Ibid., paragraphs 3.241 and 3.252.

²⁹⁶ Section C of this chapter discusses service transactions between related (affiliated) enterprises.

²⁹⁷ MSITS 2010, paragraph 3.253.

14.227. The compilers are advised to consult MSITS (paragraphs 3.253 – 3.268) on the details on inclusions and exclusions. However, it should be specially noted that health and educational services provided to non-residents who are present in the territory of the service provider are included in the EBOPS travel item.

C. Service transactions between related (affiliated) enterprises

C.1. Scope

14.228. MSITS 2010 acknowledges that information on the value of all transactions between affiliated enterprises is helpful in understanding the degree to which globalization of services supply is taking place and, therefore, recommends that data on resident/non-resident transactions in services separately identify transactions with related and unrelated enterprises. This Guide considers it to be a good practice if countries define the scope of service transactions between related (affiliated) enterprises as service transactions between a foreign-controlled subset of foreign affiliates (as defined for FATS purposes)²⁹⁸. If a country is not able to compile such statistics it might consider the compilation of data on services transactions between the enterprises covered by FDI statistics or between multinational enterprises. Whatever criteria is chosen by a country it is good practice if that criteria is clearly described in a country's SITS metadata.

14.229. Although such a breakdown would be most informative at the level of the detailed EBOPS 2010 classification, it is recognized that this could place an additional burden on both suppliers and compilers of data and could raise issues of confidentiality. Therefore, MSITS 2010 recommends that such a breakdown be carried out at the aggregate level for total services transactions (under the complementary grouping of EBOPS entitled total services transactions between related enterprises). This recommendation is given a lower priority than that regarding the compilation of statistics at the level of detail described in BPM6. Countries willing to provide additional detail are encouraged to do so for some aggregated EBOPS 2010 categories.²⁹⁹

14.230. The recommendation to compile and publish such data is made because trade between the related enterprises can provide important insights into the extent to which services supply has been globalized. In addition, it can highlight the role of services and intellectual property provided by the headquarters but used throughout the MNE. Finally, research has found that intra-firm trade in goods responds differently to changes in prices, exchange rates, income, and economic growth than arm's length trade. The intra-firm trade in services may also respond differently to these factors and can account for a significant share of trade in services. For example, such trade accounted for 28 per cent of both U.S. exports and U.S. imports of private services³⁰⁰ in 2011. However, intra-firm trade is more important for some types of services (intra-firm trade accounted for 64 per cent of receipts of royalties and license fees and 77 per cent of payments of charges for the use of intellectual property).

²⁹⁸ See MSITS 2010, paragraphs 4.58 – 4.60 for further details.

²⁹⁹ *Ibid.*, paragraph 3.56.

³⁰⁰ U.S. cross-border trade in private services excludes transactions by the U.S. government (including the military). Trade in private services is the most appropriate basis of comparison because intra-firm trade covers only trade by businesses.

C.2. Valuation

14.231. Additionally, the valuation of services transactions is also an important issue (see also chapter transfer/market prices) since the recorded transactions could be under or overestimated and misrepresent the real flows of the economy. The application of the change of ownership principle impacts the records between affiliated parties. Compilers should be concerned that intra-firm trade might not reflect the real trade, as measured by market prices, to benefit from fiscal and taxation regulations, since transfer pricing is used for the valuation of services transactions.

C.3. Country experience: the United States

14.232. For conceptual reasons or due to the source data limitations, the U.S. Bureau of Economic Analysis (BEA) does not present statistics on intra-firm trade for selected types of services. Transactions between individuals and businesses are considered to be between unaffiliated parties. Thus, personal and business travel services, which are transactions by individuals who travel to foreign countries; education, which consists of expenditures for tuition and living expenses by students studying in foreign countries; medical services, which cover expenditures by patients in foreign countries; and expenditures by non-resident workers, are all considered to be unaffiliated transactions. Passenger transportation, which covers transactions between individuals and foreign airline or vessel operators, are also considered to be unaffiliated transactions. Transactions in insurance services are deemed to be unaffiliated even when they are between affiliated companies because the services are deemed to be provided to the policyholders who pay for the insurance premiums and who are unaffiliated with the multinational company. Transportation services other than passenger transportation are treated as unaffiliated because the source data do not allow transactions between affiliated parties to be separately identified from transactions between unaffiliated parties.

14.233. The remaining categories—including charges for the use of intellectual property; telecommunications, computer, and information services; financial services; and other business services—can have affiliated transactions. The source data for these statistics are BEA surveys.³⁰¹ On the surveys, U.S. companies are asked to report their transactions in a specific service type by country and, for each country, by whether the transaction was with their foreign affiliates, with their foreign parent or with foreign affiliates of their foreign parent, or with unaffiliated parties.

14.234. The definitions of affiliated parties are the same as those used to identify a direct investment relationship. A foreign affiliate is a foreign business enterprise in which a U.S. person directly or indirectly owns or controls 10 per cent or more of the voting stock in an incorporated business enterprise or an equivalent interest in an unincorporated business, including a branch. A foreign parent is the first person outside of the United States that owns or controls 10 per cent or more of the voting stock in an incorporated U.S. business

³⁰¹ Financial services are collected on the BE-185 Quarterly Survey of Financial Service Transactions between U.S. Financial Service Providers and Foreign Persons and the BE-180 Benchmark Survey of Financial Service Transactions between U.S. Financial Service Providers and Foreign Persons. Telecommunications and most business, professional, and technical services are collected on the BE-125 Quarterly Survey of Transactions in Selected Services and Intangible Assets with Foreign Persons and the BE-120 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons. These surveys can be found on BEA's website, www.bea.gov, by looking under "International" and clicking on "Survey Forms and Related Materials."

enterprise or an equivalent interest in an unincorporated U.S. business, including a branch. Foreign affiliates of the foreign parent are any foreign persons proceeding up the foreign parent's ownership chain that owns more than 50 per cent of the person below it up to and including that person that is not owned more than 50 per cent by another foreign person and any foreign persons, proceeding down the ownership chains of each of these members, that is owned more than 50 per cent by the person above it.

14.235. By collecting data on transactions with foreign affiliates separately from those with foreign parents and foreign affiliates of the foreign parent, transactions within U.S. multinational companies, i.e., between U.S. parent companies and their foreign affiliates, can be distinguished from those within foreign multinational companies, i.e., between U.S. affiliates and the foreign multinational companies that invest in them.

14.236. Multinational companies sometimes allocate expenses across various divisions or parts of the enterprise rather than billing them separately. These allocations, often called allocated expenses, headquarters services, or miscellaneous charges, are sometimes for a designated service, such as for research and development (R&D), but sometimes no specific service is designated. It is important to note here that management of patents and license fees, which may be of a similar nature to allocated expenses, should be recorded in Other business services, n.i.e. If the type of headquarters service is known, BEA asks reporters to include those allocated expenses in its data for that type of service. If the type of service is not known, BEA asks reporters to include them in the category of "management, consulting, and public relations (including allocated expenses)."

D. Allocation of resident/non-resident trade in services to modes of supply

D.1. Simplified allocation as the first step in developing statistics on services trade by mode of supply

14.237. For the development of modes of supply information a simplified (mechanical) allocation of FATS and balance of payments data to modes of supply is proposed in MSITS 2010.³⁰² This section will concentrate on the allocation of the resident/non-resident services transactions to modes of supply. The mechanical allocation of services categories either to one dominant mode or the indication of a distribution to several modes in the BOP is considered as a very first starting point as it makes use of the already compiled services components within the BOP framework to compile or to estimate statistics by mode of supply.

14.238. This approach is based on a set of assumptions about the relationships between various EBOPS components (sub-components) and modes of supply. This approach is recommended to all compilers as it will provide a first set of statistics on modes of supply comparable at the international level (which also could be disseminated in a common manner, see chapter 20). Such an allocation has an advantage of being a relatively low-cost solution, as the compiler can start working based on available balance of payments services data, and gradually build his knowledge of how services sectors are supplied internationally. It is further recommended that compilers make efforts to develop finer estimation procedures at a later stage.

³⁰² See also MSITS 2010 Chapter V and Table V.2 and chapter 1, paragraph 1.5.

14.239. This section further elaborates the compilation issues, in particular by suggesting the identification of modes in trade in services data sources (mainly mode 1 and 4, but also mode 2 under certain conditions). The section also suggests combining data sources to compile more detailed breakdowns of the travel item, therefore better responding to mode 2 information needs.

D.2. Performing a conceptual allocation of trade in services by modes, using table V.2 of MSITS 2010

14.240. Table 14.15 shows the proposed simplified allocation of various EBOPS components to modes of supply.³⁰³

Table 14.15

Proposed simplified allocation of EBOPS components to modes of supply

<i>EBOPS components</i>	<i>Mode(s)</i>					
	<i>1</i>	<i>2</i>	<i>4</i>	<i>1 and 4</i>	<i>2 and 4</i>	<i>3 and 4</i>
Manufacturing services on physical inputs owned by others		X				
Maintenance and repair services n.i.e.		X				
Transport	X					
• Passenger	X					
• Freight	X					
• Other						
– Postal and courier services	X					
– <i>Service to domestic carriers in foreign ports (and vice versa)</i>		X				
– <i>Other</i>	X					
Travel		X				
• Goods						
• Local transport services		X				
• Accommodation services		X				
• Food-serving services		X				
• Other services		X				
Construction						X
• Goods						
• Services						X
Insurance and pension services	X					
Financial services	X					
Charges for the use of intellectual property n.i.e. ^c	X					
Telecommunications, computer, and information services				X		
• Telecommunications services	X					

³⁰³ MSITS 2010, page 132-133.

<i>EBOPS components</i>	<i>Mode(s)</i>					
	<i>1</i>	<i>2</i>	<i>4</i>	<i>1 and 4</i>	<i>2 and 4</i>	<i>3 and 4</i>
• Computer services				X		
• Information services	X					
Other business services				X		
• Research and development services				X		
• Professional and management consulting services				X		
• Technical, trade-related and other business services						
– Architectural, engineering, scientific and other technical services				X		
– Waste treatment and de-pollution, agricultural and mining services						
◦ Waste treatment and de-pollution					X	
◦ Services incidental to agriculture, forestry and fishing			X			
◦ Services incidental to mining, and oil and gas extraction			X			
– Operating leasing services	X					
– Trade-related services	X					
– Other business services n.i.e.				X		
Personal, cultural and recreational services				X		
Government goods and services n.i.e.						
• <i>Government goods n.i.e., credits and debits</i>						
• <i>Government services n.i.e. credits</i>						
• <i>Government services n.i.e. debits</i>						
– <i>Commercial services purchased in host economies</i>						
◦ <i>Government units in diplomatic and similar enclaves</i>				X		
◦ <i>Personnel from home economy and dependents</i>		X				
– <i>Other commercial services n.i.e. purchased by government</i>				X		
– <i>Non-commercial services acquired by government</i>						
<i>Distribution (wholesale, retail trade) services</i>	X					

14.241. Using this table an allocation could be done as follows:

- i. *The first stage.* The compilers can allocate each service item to one of the columns identified in table 14.15 based on an assumption on how a specific service item is most probably supplied by exporters (or to importers) of the economy. In

order to provide a first approximation in a comparable way, all compilers are strongly encouraged to conduct this generic allocation;

ii. *The second stage.* The compilers should evaluate if the "generic" allocation as conducted at the first stage is relevant for their economy, and review results accordingly. It may be worthwhile discussing with the agency in charge of trade in services negotiations to analyze if these results reflect their knowledge of how services are supplied abroad and to their national economy as far as it relates to transactions recorded in the balance of payments;

iii. *The third stage.* Based on the results obtained at the second stage it might be decided to gather additional information to improve the knowledge of some specific service sectors. Such additional information can be gathered in cooperation with the agency in charge of trade in services negotiations and might validate the assumptions made earlier by statisticians or negotiators. Various ways of gathering more information may be envisaged such as:

- a. Contacts could be established with major services providers, or trade or consumer associations;
- b. The compiler could conduct qualitative interviews with one or two relevant services providers in a specific sector (e.g. legal services, computer services, consultancy, construction etc.);
- c. The compiler could also approach relevant ministries in particular sectors where internationalization is known to be important (e.g. ministry of industry, education, health)
- d. The compiler could also approach other statistical domains to obtain further information on particular sectors and to adjust the data allocation if needed (e.g., through micro-data linking).

14.242. The proposed mechanical allocation aligns with the GATS four modes which are based on an analysis of, the territorial presence of the services transactors (suppliers and consumers). The presence of the consumer and the supplier is relevant to determine the mode and these criteria are simplified. However, the nature of the services supplied/consumed has a central role in the theoretical assumptions as presented in table 14.15.

14.243. Compilers are encouraged to make use of their own information about Modes of supply and possibly different country-specific distributions among services than the general allocations listed in table 14.14. Allocations to the modes may be based on the knowledge compilers have about the provision of services from their close contact with respondents or based on their knowledge of the business structure in their country gained in the enterprise survey design process.

D.3. A special attention to mode 4

14.244. According to what is presented in table 14.5, the proposal would be to concentrate, as a first priority, on items where mode 4 is deemed to be important for the compiling economy. For example, professional and management consulting services (mainly business services) are deemed to be provided (or consumed) through modes 1 or 4 as these services often entail a proximity to the consumer for the service to be rendered. Additionally, countries which are mainly involved in providing processing services or maintenance and repair services may consider investigating more in mode 2 and mode 4 respectively.

14.245. However, the compiler should keep in mind that this table is simply a theoretical guide for classifying services transactions according to the modes of supply and that in the specific case of its economy other modes than those indicated may be involved for some specific services considering their nature. For example in table V.2 in MSITS 2010, personal, cultural and recreational services are shown as deemed to be provided (or consumed) through modes 1 (cross-border) or 4 (temporary presence of service provider, either himself if self-employed or his employee). However, for example, in the case of countries which are important destinations for the shooting of films, mode 2 (presence of consumer abroad to consume services) may also need to be considered.

14.246. The business structure of the compiling economy (e.g., the dominance of large enterprises or SMEs/micro-enterprises) should be also considered when compilers adapt the proposal on mechanical allocation to their own economy. The comparative costs of supplying or acquiring services for large enterprises may also determine the way (e.g. the mode) a service is provided/acquired. Another aspect is also the distance to the trading partner. In trying to boost growth and competitiveness, enterprises could switch from a mode 4 provision to a mode 1 strategy (with a mode 3 dimension if the proximity to the consumer on a long-term basis is considered important). An additional consideration for the compiler is the time-dimension, as the provision of services via certain modes may change over time.

14.247. The geographical location of the compiling country may also be an important aspect to take into consideration when deciding to conduct a mechanical allocation by modes. Indeed for a geographically "isolated" country (e.g. an island), mode 1, where neither the supplier or the consumer have to travel, may in general be by far the largest way of supplying or consuming services, rather than mode 4 or mode 2. Conversely, a country which has its main partners as neighboring countries (e.g. countries in Europe), the role of mode 4 (and mode 2) may be much more important.

14.248. Compilers should also consider distinguishing into services which have increasingly become more tradable due to the advances made in information and communication technologies which facilitate trade via mode 1. While many professional and management services have become more internationally tradable through mode 1, for some highly technical services, due to the high differentiation of the associated products, the presence of the supplier in the territory of the consumer may still be required to efficiently deliver the service. Consequently, these services could still be supplied with a big mode 4 component, which is why it is necessary to allocate transactions at least partially to mode 4. Thus, the differentiation and the tradability of the services are important factors in allocating services across modes, particularly for mode 4.

14.249. Identifying mode 4 within service transactions is often the key to building first estimates of trade in services by modes of supply. However, it is necessary to correctly evaluate where a service contract involves mode 4. Even the nature of the contract is relevant for a proper identification of relevant service contracts which may involve various modes of supply. This could in particular be used to look into the more specific case of self-employed persons and whether they trade mainly cross-border or by moving physically to the economic territory of their client. It would therefore be useful to conduct some analysis of specific contracts for specific groups of persons to better understand how they operate in the context of trade in services. Moreover, as noted previously in chapter 5, it is recommended to include

self-employed professionals in the business register to help collect data on mode 4 transactions.³⁰⁴

14.250. In the case of human or person-centered services, a distinction can be made between social, community and private consumer services. For this type of service, an allocation could be made either to mode 2 (e.g., travel) or mode 4 (e.g., education services (coaching activities)).

14.251. There are also some shortcomings to be considered when following this procedure. How is the most significant mode allocated? Regarding enterprises which report their main economic activity, how should secondary economic activities be treated? Regarding manufacturing enterprises providing also production services, or services packages around high value goods, how should these services be treated? Even if this framework provides an approach for a first rough measurement of trade in services by modes of supply with a minimum use of resources, relevant qualitative background information and research is needed. The compiler needs to consider these aspects when performing the conceptual allocation.

14.252. Although the process of the mechanical allocation is promoted in the context of modes of supply, it is important to note that such an exercise is encouraged more generally for improving the knowledge of compilers with respect to international trade in services. Examples of such a knowledge improvement is the differentiation made by Austria in traditional, innovative and knowledge-based services³⁰⁵ or the analysis made by the European Union in the Innovation Union Scoreboard linking services data presented according to the EBOPS classification with knowledge-intensive business services statistics (IUS).³⁰⁶

D.4. Using survey data to estimate modes of services supply

14.253. Using data sourced from existing surveys as described in chapters 6 and 10 could be a way forward to estimate the international supply of services by mode. Potentially, such estimates can be generated without additional data collection and be of acceptable quality. This does not necessarily mean that a full-fledged estimation approach should be adopted, but the efforts could be targeted towards a limited number of the most relevant services categories in the compiling economy to ensure the policy relevance of the results.

14.254. However, such an approach would necessitate some knowledge building from the compilers side. As a starting point this could be done by following the considerations outlined above in the section on the conceptual allocation. It could also be achieved by conducting a "screening" survey to identify the sectors and enterprises that should be targeted or investing in scientific, academic research to identify the structure of the services. Relevant enterprises could be extracted from the existing business registers (see also chapter 5 and chapter 6) focusing as a first step only on business services e.g. engineering services.³⁰⁷ Structural Business Statistics provide compilers with additional information regarding the

³⁰⁴ Chapter 5, paragraph 5.27.

³⁰⁵ P. Walter and R. Dell'mour (2009): Structure of Trade in services in 2006, Oesterreichische Nationalbank, Special issues of the "Statistiken – Daten & Analysen".

³⁰⁶ See http://ec.europa.eu/enterprise/policies/innovation/files/ius/ius-2010_en.pdf.

³⁰⁷ See also Eurostat manual on the Production of Business Services, Annex VIII of the European Parliament and Council Regulation No 295/2008. For more information see: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:097:0013:0059:EN:PDF>.

structure of the businesses, size-class, employment, etc which could be useful for national industry policies.³⁰⁸ Important service sectors could be identified as a starting point from the shares of the services to the GDP or share in total services. Some countries compile jointly international trade in services and structural business statistics, therefore the whole business population is available and the relevant sub-population of interest for a specific mode could be derived from this source. Additionally, access to the Business Register/Central Business Register would help identifying the target population (see also chapter 5, section E and also chapter 6).

14.255. Since the expected respondents' burden is high it would be a good practice to conduct sample surveys of the enterprises, which should reply to questions needed to estimating or allocating services by modes of supply. Business registers could give relevant information about the reference populations e.g. demographic or economic characteristics (economic activities, turnover, ownership etc.). In some cases the information is also available in internally maintained registers, so-called BOP-registers. At a later stage, modes of supply could be integrated in the existing questionnaires as a mandatory data element (see also chapter 6).

14.256. Specific data compilation could then be developed on a broader basis taking economic, political-economic and socio-economic issues into account; therefore mode 4 would be integrated in a broader concept of cross-border movements in globalization theories. A pluralistic-integrated approach can provide relevant statistical information for different statistical domains. Focusing on different user interests, specific sector studies would serve several purposes; e.g., policy makers could also be interested in specific studies, such as those incidental to agriculture or environment services. A more detailed approach (i.e., modes for more detailed services categories) may be implemented in the future, but the policy need should be identified by the national authorities for this to be developed.

14.257. Large employment or recruiting agencies³⁰⁹ that could possibly have important cross border activities could also be approached (e.g. working with persons from new EU members for instance or working with persons in so-called regional (border) clusters e.g. Grande-Region Saar-Lor-Lux). Once an analysis on the types of contracts has been conducted it would be possible to identify those services relevant for measuring mode 4 for example (see also chapter 17).

14.258. Other approaches could be envisaged, in particular by having a specialized agency conducting its own survey, and covering modes of supply. As shown in chapter 6 (paragraphs 6.177 – 6.182) the Australian International Legal Services Advisory Council (ILSAC) has been conducting for a number of years its own compilation of statistics on the international supply of legal services to non-residents. This approach benefited from the assistance of the Australian Bureau of Statistics. Such collaboration has highlighted the desirability, from ILSAC's point of view, of increasing the focus on compiling data that is

³⁰⁸ Information on small and medium-sized enterprises and specific characteristics of enterprises related to particular breakdown of activities might be important for national policy to promote cross-border services trade for enterprises which are not exporting services or to support enterprises which are already active in the export of services.

³⁰⁹ For example, since 1994, recruitment agencies in Germany can recruit in all occupational fields before there were some exceptions in management and artistic related activities.

more closely aligned to the specific modes of service delivery recognized by economies in trade negotiations, and although it does not mention it, to ensure that the data collected will be following as closely as possible international standards. This experience can also be seen as an example of positive collaboration of the body in charge of compiling trade in services statistics and an institution which has a strong interest in collecting sector specific data (chapter 3 of this guide). Although from the statistical compilers perspective it would seem difficult to replicate for all services sectors, such experience can prove useful for improving the quality of trade in services statistics as well as providing some first estimates according to the four modes.

D.5. Developing more detailed estimates of mode 2 supply of services: Breaking down travel by type of product and linking to tourism statistics

14.259. As presented in MSITS 2010 some EBOPS components are strongly linked to the supply of services through mode 2 (manufacturing services, maintenance and repair services, travel, waste treatment etc.). Travel has the strongest and clearest link with mode 2 supply of services. Currently this item is hardly detailed in terms of what is consumed by residents while abroad or by non-residents while in the compiling economy. However, some countries (e.g., Portugal) use credit cards and several other data sources to compile different breakdowns of travel in particular by product, providing therefore more detailed information on mode 2 (more details chapter 14, section B and chapter 10).

14.260. BPM6³¹⁰ and MSITS 2010³¹¹ propose an alternative breakdown of travel into: goods, local transport services, accommodation services, food-serving services and other services. For example, Sweden, Turkey and Slovenia are submitting with the annual trade in services data request this breakdown to Eurostat, though from the consolidation of the new methodological questionnaire on travel statistics Spain, Malta, Poland, Slovakia and as mentioned above Portugal and also partly Italy have this information in principle available. Therefore, it is recommended to make data available either through transmission to international organization or on national publication sites.

14.261. Other services are further broken down into education services and health services. Actually in the two latter cases, some economies collect and compile such information, but rarely make them available. Although the international standard is limited to the list under the alternative breakdown, some compilers may identify needs for other types of services such as those related to the consumption of cultural or recreational services. Focusing on the example of culture for the CARICOM region, the existing BOP classification is not sufficiently detailed to allow an appropriate analysis of the trade dimension of culture. Consequently the UNESCO Institute for Statistics, UNSD and WTO prepared a proposal for discussion by experts of the region, which in particular proposes a more detailed presentation of the travel item. Some tourism/travel surveys include a number of questions on the amount spent by type of product consumed, or on what tourists have been doing during their trip. This is generally not very detailed, but responds partly to the breakdown by product recommended in BPM6/MSITS 2010, or such results could be exploited to respond to these needs. However these data are rarely published. IRTS 2008 also proposes a breakdown of expenditure by type of product based on CPC.³¹² Consequently some tourism/travel surveys

³¹⁰ BPM6, paragraphs 10.85-10.100.

³¹¹ MSITS 2010, paragraphs 3.115-3.131.

³¹² IRTS 2008, annex 4.

could be further exploited to be able to compile more detailed data on the amount spent by type of product consumed (or on what tourists have been doing during their trip).³¹³

14.262. In this context a possibility to compile a breakdown by type of product would naturally be to have balance of payments compilers and tourism statisticians work more closely together. Both have an interest in the collection of data on the types of goods and services acquired by international tourists. Common data sources could be used such as border/traveler surveys, household surveys or surveys of tourism related enterprises/entities (see also chapter 13). Once again caution should be taken as to the quality of the data collected as well as the existing differences between both concepts, as outlined in the previous section. Data collection should be made in such a way that it takes into account these differences in order to fully respond to the information needs of both balance of payments/trade in services and tourism statistics compilers.

14.263. In the Italian questionnaire, the breakdown of travel expenditures by type of product is currently related to five items: transport (tickets for travel outside and inside the visited country), accommodation, restaurants and cafés, shopping, other services. This breakdown is not currently released but it could be derived from information available on the Banca d'Italia website, in the micro-data section³¹⁴ and is used for the compilation of other statistics; e.g., TSA.

14.264. A first stage here would be to see what type of information is available within a country and how this information could be used and then made available to users. This would be un-costly as it would use existing data. A second stage would be to see how such an approach could be further developed to compile more detailed information of interest within a country (e.g. health services, cultural services etc.).

14.265. Either data could be derived from tourism expenditure information (collected through the tourism data collection tools) or from a source used to directly compile the BOP travel item (e.g. travel survey by a central bank). Note that in principle the latter source will ensure a more complete coverage of the population travelling abroad as data would also cover those in an employer-employee relation (e.g. border workers).³¹⁵ The information can then be used to estimate the value of mode 2. Data should be collected on expenditure on goods and services (or based on theoretical assumptions); however the main focus from the MSITS 2010 perspective should be on services. We could then have a breakdown of travel/tourism expenditure/consumption by type of service product consumed, as suggested in ITRS 2008 or MSITS 2010, such as for accommodation, food serving services, local transport, education or health.

³¹³ It is assumed that at the national level these data are often compiled or could be easily available, however they are rarely published or transmitted to international organizations.

³¹⁴ Note that the breakdown is provided to users on request and it is sometimes released in occasion of public conferences. This information was also used for the compilation of the first edition of the Italy's Tourism Satellite Account which, was recently published by the national statistical institute (<http://www.istat.it/en/archive/71012>) in collaboration with the Bank of Italy and other bodies.

³¹⁵ It is important to note that although the tourism concept does not cover trips for employment purposes (i.e. employer-employee relation in economy visited), this can still actually be covered by the data collection tools and statisticians should in that case take advantage of the supplementary information potentially available.

D.6. Country experience on compilation of mode 2 data based on visitors surveys

14.266. Some countries developed visitors' survey questionnaires which actually ask for more detailed information on their expenditure, in particular for the category other services, e.g. having a separate estimation for museums, heritage sites and guided tours, or entertainment. This would need to be established according to the needs of each country.

14.267. The relation between tourism statisticians and balance of payments compilers should therefore be encouraged in particular in countries where tourism may be an important input to the current account, and also when the population of persons traveling abroad for short-term employment purposes may be important. However, there would clearly be a need for reviewing the scopes of both statistical domains, ensuring that both data needs are met in the data collection tools. This Guide promotes the integration of surveys initially developed separately for the BOP and tourism statistics purposes as a good practice. Such integration should be envisaged and the conceptual differences should not prevent having the same source of data responding to all information needs. For example, in Austria OeNB and Statistics Austria have joined their forces for more than 10 years and are running a joint survey for tourism expenditures (according to tourism statistics) and the travel item thus proving that such a joint operation this would be beneficial and may enable some substantive savings.³¹⁶

D.7. Analysis of micro data to refine mode 2 information

14.268. When considering the collection and compilation of data for the breakdown of travel, it is in particular important to identify goods separately as these products are of minor interest from a GATS/trade in services perspective. Tax free purchases could be used as complementary sources to estimate separately the goods purchased by persons going abroad for travel reasons, since the traveler pays the VAT over goods in the shop, and can request for a refund when exporting the goods.

14.269. The use of merchant codes from credit card data is also suggested. This could enable a more detailed analysis of travel/tourism data and would also allow to identify e.g. transport services and to extract data split by goods and services. For example payments of or to a company which provides maintenance and repair services would be reported since this company is providing services and the payments have to be reported. Also merchant codes categories like Hotels/Motels/Inns/Resorts, car rentals or tourist attractions and exhibits are subject of reporting. This method combines several advantages, the costs for compilers are relatively low and besides the BOP travel item further services categories (other business services, communication services, government services) could be compiled or verified.

14.270. In addition customs data could help in the identification of thresholds in order to adjust travel and goods (EBOPS concept) accordingly (i.e. durable goods and valuables).³¹⁷ For that, totals on travel-related inflow from travel survey data or credit card data has to be calculated. The value of the total amount of valuable and durable goods in excess of custom thresholds from customs data has to be calculated and double counting to be avoided.

³¹⁶ See Austria's example beginning at paragraph 14.115 in this chapter for a discussion of this methodology.

³¹⁷ BPM6/MSITS 2010 and ITRS 2008 have a different treatment concerning some goods purchased by those traveling: the BPM6/MSITS 2010 travel item excludes purchases of valuables and consumer durables above a customs threshold whereas tourism includes all such purchases irrespective of the threshold. See MSITS 2010 Box III.5 for relationship between travel and tourism.

D.8. Allocation of education and health services

14.271. For the compilation of data on resident/non-resident transactions in education or health services additional sources of information from specialized entities may be necessary (e.g., the Ministry of Education and the Ministry of Health) or other types of sources. In particular on the receipts side, relevant ministries usually gather such information (i.e. for mode 2, but also other modes) or would have an interest in doing so. Another option is to collect data from all higher education institutions and universities operating in the country with the aim to collect data on foreign students studying in the compiling economy (this is the practice of Cyprus). Other questions relevant to mode 2 could be also added to the survey questionnaires. Data from health insurance companies could be used and combined with administrative sources and information from travel surveys for further analysis on health services.

14.272. Embassies and consulates may also hold information for both exports and imports of such services. However, although some data may be available from these additional sources, these are not always well exploited. For health services, it could be recommended to use administrative data from health and social insurance. Other breakdowns of interest to the compiling economy could also be encouraged for other sectors of particular interest to an economy; e.g., cultural services, leisure.

14.273. For example, given Australia's interest in the exports of education services, the Australian Bureau of Statistics compiles a breakdown of education travel data by type of expenditure (education fees and other expenditure) and type of institution. The exports of education services deemed interesting for European countries especially after the harmonization of the university degrees in the higher education area initiated with the Bologna-Process.

14.274. Several compilers stated that it would be interesting to have further details in health and education services and also combine this information from the travel/tourism surveys with the information as requested in “other services”. Given the importance, for example, of increasing demand for particular services and the complexity of some existing questionnaires, other methods should be envisaged to compile more details on health-related or cultural services. For example, Austria is deriving information on health-related services which residents consume in Hungary as a neighboring country from a household survey, together with administrative information from the project “health region – Regional Network for the Improvement of Healthcare Services,” which is run by the European Union.³¹⁸ Both relevant information sources are combined to establish sound estimations. Data could be obtained as well by health insurance and credit card data expenditures to health care providers, since this information could be extracted by the appropriate merchant code categories.

14.275. Some information could be derived from the travel purpose variables, as in the case of Italy, with reference to the items “Study, courses” and “Medical treatment, SPA”. This way the total expenditure of the travelers of that type, not only the expenditure on health and education-related goods and services would be measured. Some other information could be derived from further linking with administrative data. Once again, VAT data (from the National Tax and Customs Administration) could be used efficiently for those purposes.

³¹⁸ For details see <http://www.healthregio.net/>.

D.9. Country experience: Turkey

14.276. Turkey's compilation system (*see* paragraphs 13.51-13.55 in chapter 13) entails some advantages for modes of supply analysis. To be more precise, the first advantage stems from already having the following breakdown of travel by type of product for Mode 2 purposes both for travel credit and debit as well as for personal and business travel (except for the expenditure on package tours: the share pertaining to Turkey for credit and the share pertaining to non-residents for debit) almost on an EBOPS 2010 classification: breakdown a) Goods, b) Local transport services, c) Accommodation Services, d) Food-serving Services, e) Health services, f) Sports, education and culture.³¹⁹ In addition, some of the Mode 4 type of transactions may be identified through the ITRS forms.

14.277. At this point, it may be useful to give more information on the TURKSTAT travel surveys conducted in cooperation with the CBRT and the Ministry of Culture and Tourism. In connection with Mode 4 purposes. These are face to face surveys conducted at the border gates, on the nationality basis, four times a year, so as to cover quarterly periods. For instance, the "Departing Non-resident Visitors" survey for travel credit is carried out at 25 border Gates, which covers 90 percent of all departing visitors according to the departure way (Air, Road, Rail and Sea), and as regards years and terms, new gates have been added or excluded. The purpose of this survey is to determine the profile (age, sex, education level, occupational status), travel characteristics (purpose of visit, the place stayed, accommodation type, night spent, types of expenditures) and to estimate the Turkey's travel income of foreigners and citizens residing abroad. The number of foreign visitors is based on the administrative border statistics of the Directorate General for Security for the related periods which cover all arrivals and departures in all border gates in the details of citizens, foreigners, nationality, month and border gates (overnight visitors and excursionists).

14.278. The survey is carried out for overnight visitors and excursionists by 0.5% sample rate to estimate on the basis of departure way and nationality and estimations are given quarterly in the detail of 26 selected nations and 10 country groups.³²⁰ The sample survey results estimate the average expenditures with the breakdown of overnight stays and the excursions, which are expanded with the related Directorate General for Security border statistics. In order to estimate average expenditure figures for Turkish travelers abroad, sample surveys are also conducted on a quarterly basis for resident visitors arriving in Turkey.

14.279. In the light of the above considerations, the "Departing Non-resident Visitors" survey has questions on general occupational status (question 6 below) and purpose of the visit (question 9 below) with one of the options being "Business (conferences, meetings, assignments etc.);" albeit with no further breakdown. This option may further be broken down into i) conferences, meetings, trade fairs and exhibitions etc. and ii) as a contractual service supplier and iii) other. The next step would be to modify question 6 to identify the type of the employer-employee relationship for those whose purpose of visit is business and professional activities as such if (i) their employer is in Turkey, (ii) outside Turkey. The resulting matrix of the mentioned questions may then prove to be useful, provided that a statistically meaningful expansion can be achieved, which should be assessed with statistical scrutiny.

³¹⁹ In the EBOPS 2010, the distinction regarding *other services* is between education services and health services.

³²⁰ Turkish Statistical Institute (2011), Tourism Statistics.

14.280. The compilation of the additional item on tourism services related expenditure in travel and passenger transport should also be encouraged to establish a clearer link between the BOP and tourism statistics. Finally it is necessary that BOP and tourism statisticians cooperate, and in particular investigate if more detailed services categories are of interest. Also some data for the tourism satellite accounts could probably be integrated.

D.10. Country experience: Portugal

14.281. A separate alternative breakdown of travel into types of goods and services is recommended according to BPM6/MSITS2010. Box 14.9 shows the level of product detail required as supplementary breakdowns for travel in according to BPM6 and EBOPS 2010 integrated with additional requirements included to provide the necessary level of detail for other statistical domains.

Box 14.9

Level of product detail required for supplementary breakdown of travel according to BPM6 and EBOPS 2010

BPM6/ EBOPS 2010	Type of Product
1.A.B.4.0.1	Goods Fuel Other goods
1.A.B.4.0.2	Local transport services Air transport Rail transport Road transport Other transport Rental services
1.A.B.4.0.3	Accommodation services
1.A.B.4.0.4	Food-serving services
1.A.B.4.0.5	Other services
1.A.B.4.0.5.1	Health services
1.A.B.4.0.5.2	Education services Cultural and recreational services Other services

14.282. The forthcoming payment cards database can provide important information to meet these new requirements, using the activity sector code of the goods and service provider. For payments made in Portugal by cards issued abroad in Portugal the NACE of the POS owner is available, while for payments made abroad by cards issued by resident institutions the MCC of the POS owner is provided. These variables are used as proxies. A correspondence table between NACE or MCC and the different travel expenditures on goods and different types of services has to be developed. Furthermore, to identify local transport services other than rental services separately from international transport services the border survey is going to be used.

14.283. In addition, when travel expenditures are prepaid to resident travel agencies, both in terms of travel credits and travel debits, the direct reporting by these companies will provide the breakdown by good and type of service for travel credits as well as for travel debits. This information complement to payment cards data. For the same breakdown of payments made to non-resident travel agencies, on the debits side, the border survey is being considered as a

possible data source. In terms of travel expenditure on goods, BPM6 recommends the acquisition of valuables, consumer durable goods, and other consumer purchases for own use or to give away acquired by travelers in excess of customs thresholds to be registered under general merchandise and not under travel. To identify the acquisition of such goods, different variables from the payments card database have to be combined, namely, the activity classification of the goods provider is restricted to jewelry, art, cars and electronic goods, and considering some minimum threshold for the value of the operation.

Chapter 15 Compilation of foreign affiliates statistics

15.1. *Scope.* The Chapter consists of the following sections: Compilation of foreign affiliates statistics: an introduction (Section A), FATS variables and their compilation (Section B), selected additional data compilation issues (Section C), and country experiences (Section D).

A. Compilation of foreign affiliates statistics: an introduction

15.2. *User needs.* Increased globalization of economic activity, combined with the continued growth of services trade, have led to the need for a more complete picture of the international supply of services that takes into account not only resident-nonresident transactions as recorded in the balance of payments but also those services that are delivered via physical commercial presence that are not included in BOP statistics as trade in services. While the production and use of services provided by foreign affiliates are part of the national accounts of the host country, including exports of services to other countries, such services will not appear in the national accounts of the home (investing) economy, unless they are ultimately imported by the home country.

15.3. As a result, an in-depth understanding of the process of globalization and the course of economic development requires more complete accounting of the actual sources of supply of services and the degree to which the different modes of delivery serve as substitutes or complements. For example, for the United States in 2010, services supplied by U.S. firms to foreign markets via affiliates were slightly more than twice the value of services delivered as exports through cross-border trade; similarly, services supplied to the U.S. market by the affiliates of foreign firms were nearly twice the value of those delivered as imports through cross-border trade. FATS data are also important for understanding the impact of FDI on a broad set of economic activities in an economy such as output, employment, value added, and trade, rather than just the investment transactions and positions that are the focus of FDI.

15.4. Interest in statistics on foreign affiliates has been prompted by two primary factors. The first is the growing integration or globalization of the world economy. From a variety of motives — among others, to reap the benefits of geographical diversification; to participate in bilateral investment treaties via holding companies; to circumvent trade barriers; to increase proximity to markets; to reduce costs of labor, transportation and other inputs; and to avoid more burdensome taxes and regulations — an increasing number of enterprises have expanded their operations beyond the countries of their controllers. The need to understand this phenomenon of globalized operations, and to monitor the performance of the foreign affiliates through which they are conducted, is quite separate from the needs associated with any trade agreements. In this regard, FATS are important analytical tools.³²¹

15.5. The second factor accounting for interest has been the General Agreement on Trade in Services (GATS). By recognizing the need for proximity between suppliers and consumers of services, it has, among other consequences, created a new need for information describing the activities of foreign-owned or -controlled enterprises in host economies. The information will mainly relate to commercial presence. However, partial information on the presence of natural persons may also be available from this source, if employment by foreign affiliates is collected and if the foreign employees (such as temporary corporate transferees) can be

³²¹ A related set of statistics, Activities of Multinational Enterprises (AMNE), have a broader scope by including statistics on the activities of parents as well as on the activities of foreign affiliates.

separately identified. For both of these purposes, FATS are of interest in their own right, but it will often be possible to ascertain their full significance only when they are viewed in conjunction with other information, such as comparable information on total home- or host-country economic activity and on services supplied through modes other than commercial presence.

15.6. The main elements of FATS conceptual framework and its scope are described in Chapter 1 (Section C). The FATS compilers are advised to refer to that part of the Guide as well as to MSITS 2010, Chapter IV. Another valuable source of information is *Foreign Affiliates Statistics (FATS) Recommendations Manual, 2012 edition* produced by Eurostat and containing the FATS conceptual framework as adopted for EU as well as a lot of practical information of FATS compilation.³²²

15.7. *Statistical unit.* For inward FATS, the statistical units are the enterprises and all branches, which are under foreign control and for outward FATS, the statistical units are the enterprises and all branches abroad that are controlled by an institutional unit resident in the compiling economy.³²³ MSITS recommends that FATS data be collected at either the enterprise (company) level or at the establishment level (level of individual business locations). Neither level of consolidation is clearly superior because each has its own strengths and weaknesses. For example, some financial indicators, such as total assets, are more appropriately collected from enterprises than from establishments. In addition, because FDI statistics are usually collected at the enterprise level, collection of FATS at this same level facilitates linkages between the two types of data. However, because enterprises are more likely than establishments to engage in activities in multiple industries or locations, data that are classified on the basis of activity or location can be more difficult to interpret for enterprises than for establishments.

15.8. For data collection at the enterprise level, collection can be at the level of the enterprise or at the level of the local enterprise group. An enterprise is an institutional unit, such as a corporation or a non-profit institution, engaged in production of goods or services. A local enterprise group refers to all enterprises located in the same economy under the control of the same owner. As with enterprises (as noted in paragraph 15.6.), there is an even greater risk that local enterprise groups are engaged in multiple activities, making data classification more difficult.

15.9. Although advantages may exist for each level of consolidation, MSITS 2010 makes no recommendation as to statistical units. FATS often will be developed in the context of existing statistical systems, where the statistical units are already defined, and in those cases, there may be little choice with regard to the units that are to be used. Because the statistical units can have an important bearing on how the statistics are interpreted, both in isolation and in comparison with other data sets, it is recommended that metadata on the statistical units used in collecting FATS be disclosed in explanatory notes.

15.10. In the U.S. FATS, for example, statistical units may include establishments or local enterprise groups. For inward FATS, data on U.S. operations are reported as a full domestic consolidation, which is equivalent to a local enterprise group. For outward FATS, data tend

³²² *Foreign Affiliates Statistics (FATS) Recommendations Manual, 2012.* Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-12-016.

³²³ *Ibid.*, page 13. Also, for more details on “control”, see chapter 1 of this guide, paragraphs 1.48 – 1.52.

to be less consolidated; affiliates can never be consolidated across country lines and may only be consolidated within a country if they are part of the same business operation or are in the same industry.³²⁴

A.1. FATS Variables and their compilation

15.11. A wide range of economic data or variables — operational and financial — in regard to FATS may be relevant for analytical and policy purposes. The selection of the variables to be collected should be based primarily on their usefulness for trade policy needs and for analyzing globalization phenomena. Practical issues associated with data availability must also be considered. With such considerations in mind, and in the interests of harmonization with other international guidelines, MSITS 2010 recommends that the FATS variables to be collected include at least the following basic measures of foreign affiliate activity:

- i. sales (turnover) and/or output;
- ii. employment;
- iii. value added;
- iv. exports and imports of goods and services;
- v. number of enterprises.

15.12. Although these variables constitute a basic set which can provide answers to a variety of questions, additional variables may prove useful in addressing specific issues (among these variables are compensation of employees, gross fixed capital formation, total assets, and research and development expenditures). MSITS 2010 suggests several additional measures that might be considered for collection by countries that are able to compile such information. Most of the “basic” and the “additional” variables, as well as their definitions, have been drawn from the 2008 SNA.³²⁵

15.13. In principle, data for a given reference year should correspond to the calendar year, but firms may report on a fiscal or accounting year basis if that is what is available. Activity is recorded as it occurs rather than when the related payment is made (accrual basis). Flow variables should be recorded for the whole reference year, while stock variables should, if possible, be recorded as of the end of the reference year. An exception to this is the employment variable, which, as it is often subject to strong seasonal variations, use of an annual average is preferable. Data for a given reference year are mainly valued at the prices and exchange rates of that year. For stock variables (for example, property plant and equipment), values should be recorded at historical cost and will largely reflect prices at the time the asset was acquired rather than those of the reference year. Revaluations to reflect current-period prices can be made by the compiling agency.

A.2. Sales and output

15.14. Sales and turnover here have the same meaning and are used interchangeably. Following the 2008 SNA, *output* differs from sales because it includes changes in stocks of finished goods and work-in-progress and because of differences in measurement applicable to wholesale and retail trade, insurance, and financial services industries. For affiliates in

³²⁴ BEA also requires that consolidated affiliates have the same immediate parent or that one affiliate is entirely owned by another.

³²⁵ Other variables not mentioned in the Manual on Statistics of International Trade in Services as basic and additional variables may also be collected in order to cover important needs, in particular “hours worked” (SNA 2008, paragraph 19.78) are relevant in the context of the measurement of productivity.

insurance, wholesale and retail trade, and finance, sales may include non-service elements or may exclude the value of services provided without an explicit charge. To correctly measure output for these service sectors, additional data collections, use of data from outside sources, and estimation methodologies must be used. Output is a superior and more refined measure of activity than sales for most purposes and is recommended as the preferred variable for compilation. However, sales data are easier to collect and may present more options for disaggregation.

15.15. For insurance, international economic accounting guidelines recommend a net premiums approach to measuring insurances services equal to gross premiums earned plus premium supplements minus estimated claims incurred (either estimated claims or benefits due) and, in the case of life insurance, minus the net increase in life insurance actuarial reserves. In the United States, to estimate the value of insurance output supplied through affiliates, the U.S. BEA collects data on the premiums earned and losses paid by majority-owned affiliates with operations in insurance on its FATS surveys. In addition, information collected on investment income of majority-owned affiliates with operations in insurance collected on its FATS surveys are combined with data on the domestic insurance industry to estimate the value of investment income earned on technical reserves.

15.16. For the wholesale and retail trade industries, their services should be measured as trade margins—wholesale or retail sales of goods less the cost of the goods resold. To construct estimates of distributive services supplied through affiliates, the U.S. BEA collects data on the cost of goods sold and the beginning- and end-of-year inventories of the goods for resale on its censuses of FATS, which are conducted every five years. In between its censuses, BEA uses data on the domestic wholesale and retail trade industries to produce estimates of distributive services supplied through affiliates.

15.17. For banks, sales include the explicit fees charged by banks plus financial intermediation services indirectly measured, should be included in measures of the outputs of banks. The U.S. BEA collects data on both banks' explicit fees and on their total interest paid and received to estimate the value of output by affiliates in banking.

A.3. *Value added*

15.18. The 2008 SNA defines the gross value added of an establishment, enterprise, industry or sector as the amount by which the value of the outputs produced exceeds the value of the intermediate inputs consumed. A related concept--net value added--is defined as gross value added less the consumption of fixed capital.³²⁶ Gross value added can provide information about the contribution of foreign affiliates to the gross domestic product of a host country, both in the aggregate and in specific industries. Gross value added receives higher priority than net value added and is often easier to compute because it does not require estimation of capital consumption.

15.19. Value added can be measured in one of two ways. First, it can be measured as gross output (revenue) less its intermediate inputs (purchased goods and services used in production). Second, it can be measured as the costs incurred (except for intermediate inputs) and profits earned in production. Costs generally fall into four categories: compensation of employees, net interest paid, taxes on production and imports, and the costs of capital consumed in production.

³²⁶ SNA 2008, paragraph 6.74.

15.20. In the United States, the value added measure included in its FATS statistics are based on the sum of costs incurred and profits earned in production; the necessary elements are collected on its FATS surveys. Once value added has been derived, the total value of purchased goods and services used in production can be derived by subtracting value added from gross output.

A.4. Trade variables

15.21. International goods and services transactions of foreign affiliates constitute another basic indicator of activity. The concept is international trade in goods and services between residents and non-residents. Appropriate sources for such information include balance of payments data and data provided by parent enterprises and affiliates in separate questionnaires. The possibilities for disaggregating total exports and total imports may depend to a large extent on the sources used to obtain the data. When the data are obtained through linkages with primary data sources for balance of payments transactions, breakdowns by product and by origin or destination will often be possible. If this is the case, exports and imports of services may be disaggregated, not only by the primary activity of the affiliate according to ICFA Rev.1 but also by product, on a basis compatible with EBOPS 2010. If data are obtained through separate questionnaires, it is likely not possible to provide great detail on trade by country or product. However, it may be possible to disaggregate export and import data into trade with the foreign parent or ultimate investor, other trade with the foreign parents' or ultimate investors' country, and trade with third countries.

A.5. Employment

15.22. In a FATS context, employment would normally be measured as the number of persons on the payrolls of foreign affiliates. Employment data are sometimes converted to a full-time equivalent (FTE) basis, whereby part-time workers are counted according to the time worked (for example, two workers on half-time schedules are counted as one fulltime worker). Although FTE employment may provide a better measure of labor input, this measure is not as widely available as numbers of employees and may be difficult to implement consistently in the context of employment practices that may vary across countries.³²⁷

15.23. For these reasons, MSITS 2010 recommends that the FATS employment variable be the number of persons employed. The number should be representative of the period covered (such as an annual average), but in the absence of strong seasonal or other fluctuations in employment, it may be measured as of a point in time, such as the end of the year, following national practices. A useful extension would be the separate identification of employment of foreign residents temporarily resident in the compiling economy working for the affiliate.

A.6. Number of Enterprises

15.24. The number of enterprises (or establishments, where the establishment is the statistical unit) meeting the criteria for coverage by FATS is a basic indicator of the prevalence of control by foreigners in the host economy. That number may be compared with the total number of enterprises (or establishments) in the economy. It may also be assessed in

³²⁷ Moreover, with the move by the International Labour Organisation (ILO) to recommend recording total hours actually worked as the preferred measure of labour input, the use of full-time equivalent is likely to be gradually phased out (SNA 2008, paragraph 19.45).

relation to the other FATS variables because it allows the computation of ratios — such as value added or number of employees per enterprise — that may be compared with the corresponding ratios for domestically controlled enterprises, thus giving an indication of the behavior of foreign affiliates.

15.25. It should be recognized that the data on the number of enterprises alone may not give an accurate picture of the overall importance of foreign-controlled enterprises, because of differences in size between these enterprises and those that are domestically owned. If the foreign-controlled enterprises tend to be larger, for example, then their share in the total number of enterprises will be smaller than their share in the various measures of operations. This would tend to understate the role and importance of these enterprises in host economies. Typically, information on numbers of enterprises will be a natural by-product of collection of data on other FATS variables, rather than a separate target of the data collection effort. As a result, the number is likely to be affected, often significantly, by the level of company consolidation and by thresholds for reporting on surveys. To assist users in interpreting counts of enterprises, compilers are encouraged to indicate in the explanatory notes how the numbers were derived.

A.7. *Other FATS variables*

15.26. Although not included as priority items, other FATS variables may for certain countries constitute equal or even greater importance than some of the data items described above. As with the priority items, comparisons with the total economy and with specific sectors can be made and used for the purpose of assessing the impact of foreign-controlled enterprises on home and host economies. Among such variables, as listed and defined below, are those for which data are already being collected by some countries. (The definitions are drawn from the 2008 SNA, which may be consulted for additional details.)

15.27. *Assets*. A store of value that represents the benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another. Assets include both financial assets and non-financial assets, whether produced or non-produced and are often referred to as the “balance sheet total.”³²⁸

15.28. *Compensation of employees*. The total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work performed by the employee during the accounting period.

15.29. *Net worth*. The difference between the value of all assets — produced, non-produced and financial — owned by an institutional unit or sector and all its outstanding liabilities.

15.30. *Net operating surplus*. Defined as gross value added less compensation of employees, consumption of fixed capital and taxes on production, plus subsidies receivable.

15.31. *Gross fixed capital formation*. Measured by the total value of a producer’s acquisitions, less disposals, of fixed assets during the accounting period, plus certain

³²⁸ The OECD is currently working on the issue of linking (real) economic variables from the FATS statistics with financial variables from balance sheets and income accounts. See *Harmonisation and integration of financial and economic measures of multinational enterprises - Final report*, OECD working Group on International Investment Statistics, March 2013, DAF/INV/STAT(2011)10/FINAL.

specified expenditure on services that adds to the value of non-produced assets. (*Fixed assets* are produced assets that are themselves used for more than one year repeatedly or continuously in production processes.)

15.32. *Taxes on income.* Taxes include corporate income taxes, corporate profit taxes, and corporate surtaxes, among others, and taxes that accrue to owners of unincorporated enterprises as a result of the generation of income by those enterprises. Taxes on income include only taxes in the host country of the affiliate and not any taxes paid by the parent in the home country as a result of income earned or distributed by the affiliate. Taxes on income are usually assessed on the total income of corporations from all sources and not simply on profits generated by production.

15.33. *Research and development expenditures.* Expenditures on work undertaken on a systematic basis to increase the stock of knowledge, and use of this stock of knowledge for the purpose of discovering or developing new products (goods and services), including improved versions or qualities of existing products, or discovering or developing new or more efficient production processes. This variable is important as FDI is deemed to be a source of technology transfer.

15.34. *Purchases of goods and services (intermediate consumption).* Expenditures on goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. For economic analysis, it would be useful to separate local purchases from imports and to provide information on goods and services that are purchased for resale in the same condition as received. If intermediate consumption cannot be collected directly, it can be estimated as the difference between gross output and value added.

B. Selected additional data compilation issues

B.1. Activity breakdowns

15.35. The activity breakdown should follow the activity of the "affiliate enterprise". Frequently, the activity of the resident investor is *incorrectly* used as a proxy for the activity of the affiliate, whereas for inward FATS, the activity of the resident affiliate should be the one used. Assigning an activity code - contrary to a widespread misconception - is not an easy task. For outward FATS the only way to collect the information is by asking the respondent. In order to collect information on activity breakdowns, the compilers are encouraged to: 1) ask affiliates whether they are engaged in production, trade or any other service activity; 2) provide a list of only 2-digit codes /NACE ISIC; and 3) ask for a verbal description of the activity. By carefully assessing these responses, along with consultation of the internet and public registers, compilers can derive a meaningful allocation of activity. While this procedure is burdensome at the time the affiliate is initially surveyed, the information typically will not need to be requested again for at least 5 to 10 years.

B.2. Compiling services as a secondary activity of manufacturing or other industries

15.36. *Compiling services as secondary activities of manufacturing or other industries (i.e., ISIC sections A to F).* MSITS 2010 recommends that FATS variables be classified by the activity of the affiliate according to ISIC, and grouped according to the ISIC, Rev.4 Categories for Foreign Affiliates in services, Revision 1 (ICFA, Rev.1), which have been

derived from ISIC. These categories cover all activities but provide more detail for services than for goods. Annex II on page 149 of MSITS 2010 offers general guidelines. As noted earlier, in general, more data will be available for inward FATS than for outward FATS, in which case countries might provide a less detailed breakdown for outward FATS for selected industries. However if countries are in a position to provide more detail than is presented in annex II, this supplementary breakdown should be compatible with ISIC, Rev.4. Services supplied by enterprises primarily engaged in manufacturing activities may also be of interest in the context of the supply of manufacturing services on physical inputs owned by others.

15.37. This basis of presentation allows activities of services enterprises to be viewed within the context of the activities of all enterprises. In addition, it provides a framework for displaying services produced as a secondary activity by enterprises classified as goods producers. Finally, this approach has been adopted by the countries and international organizations that are actively developing FATS. However, the data recorded for any given activity must be interpreted with care. Because a given firm will often have secondary activities in industries other than the activity of their primary classification, the value recorded for any given activity must be interpreted as an indication of the total activity of enterprises for which the given activity is the most important, rather than as a precise measure of the value of that activity itself.

15.38. For the same reason, as well as because of differences in the classifications themselves, the extent to which data on resident/non-resident trade classified according to EBOPS can be aligned with data on FATS variables classified according to ICFA, Rev.1, is inherently limited. Nonetheless, establishing a correspondence between the two bases of classification may be useful, mainly for activities that tend to be carried out only by enterprises that are specialized in the activity and generally do not engage in significant secondary activities.

15.39. As a longer-term goal, countries are encouraged to work towards disaggregating by product some of the variables — which include sales (turnover), output, exports and imports — that lend themselves to attribution on this basis. Product-based statistics are more likely to be free of problems of interpretation related to secondary activities and are consistent with the basis on which GATS commitments are made and with the basis of classification used for trade between residents and non-residents.

15.40. MSITS 2010 recognizes that data, in particular ICFA, Rev.1, categories may sometimes have to be suppressed (that is, not separately shown) so as to preserve the confidentiality of those data for individual companies. This need for suppression occurs most often at the most detailed level of the classification, or when smaller countries are involved, or in cases where the data are cross-classified by country or area.

B.3. UCI and Partner country

15.41. The ultimate controlling institutional (UCI) unit is the recommended basis for classification by country for inward FATS, but it is also relevant for outward FATS. (See Chapter 1, Section C of this Guide and MSITS 2010 Box IV.2). FATS variables for a given affiliate are attributed in their entirety to a single country of ownership or voting power. As descriptors of the operations of affiliates, they should not be factored down by ownership shares. Nor are the values of the variables to be apportioned between the controlling enterprise and any foreign minority owners of voting power. However, in cases where foreign control has been achieved through a group of affiliated investors, classification

dilemmas may arise when these investors are from different countries. If the voting power is evenly split, the determination of the country of control has to be made using criteria other than ownership percentages of voting power. Although it is sometimes difficult to reach a decision in such cases, there is often some factor that would lead to the selection of one country rather than another. For example, if one controlling entity's interest in the affiliate was held directly and the other controlling entity's interest was held indirectly, then the affiliate generally would be classified to the country of the controlling entity holding the direct interest. Or, if one of the foreign controlling entities was a government entity, then the country of that government would probably be considered the country of control. Finally, if one of the foreign controlling entities was a holding company or was located or incorporated in a tax haven country, then the other country would probably be considered the country of control. In the absence of any such factor as could be used as a basis of attribution, the value of FATS variables may be allocated evenly among the foreign countries of control. However, data so allocated may pose problems of interpretation, and efforts should first be made to determine a basis for allocation to a single country.

15.42. For inward FATS, the question is whether to attribute FATS variables to the country of the immediate investor (first foreign parent) or to that of the ultimate investor (ultimate controlling institutional unit). Frequently, the first foreign parent and the ultimate investor are one and the same, but in many cases they differ.

15.43. Apart from practical considerations, it is conceptually preferred to attribute variables concerning production and industrial activity to the country of the ultimate investor because this is the country that ultimately controls, and therefore derives most of the benefits from controlling, the direct investment enterprise. In light of the relevance of the ultimate-investor basis and the demonstration by a number of countries that compilation on this basis is feasible, MSITS 2010 recommends that the ultimate investor serve as the first-priority basis for compilation of inward FATS and as the basis on which estimates are prepared in the greatest detail.³²⁹ However, considering that information on immediate investors may be available as a by-product of linkages to FDI data, and to facilitate comparisons with those data, countries are encouraged to make available some data classified by the country of the first foreign parent.

15.44. The identification of the UCI can be obtained on surveys to collect FATS or FDI data. For example, in the United States, the UCI is referred to as the Ultimate Beneficial Owner. The surveys of foreign-owned affiliates in the United States collect information on the name, country of residency, and industry of the Ultimate Beneficial Owner. Information on the UCI may also be available from a business register that describes the structure of the enterprise group.

15.45. Outward FATS are statistics on foreign affiliates controlled by residents of the compiling economy and should include all controlled foreign affiliates, regardless of whether the control in the affiliate is held directly or indirectly through a chain of ownership and regardless of whether the direct investor in the compiling economy is the UCI unit or is, instead, an intermediate investor in an ownership chain. However, because the activities of an affiliate held through an ownership chain could be recorded in the FATS of both the ultimate and the intermediate investors, and in order to facilitate international aggregation without

³²⁹ Identification of the UCI can also be used to identify cases of round-tripping in inward FATS statistics. Round-tripping refers to the channeling abroad by direct investors of local funds that are then subsequently returned to the local economy in the form of direct investment.

double counting, compilers are strongly encouraged to identify the aggregate share of FATS variables accounted for by enterprises for which the compiling country is the ultimate controller. Of particular interest will be data on this set of foreign affiliates belonging to ultimate investors resident in the compiling economy.

B.4. Partner country in FATS and FDI.

15.46. The FATS compilers should be aware of the differences in partner country attribution in FATS and FDI statistics:

i. *Inward FATS.* MSITS 2010 recommends that inward FATS statistics be attributed to the country of the UCI. This is consistent with the OECD Handbook. However, the primary classification of FDI data is by the country of immediate investor. Therefore, it is recommended that countries provide some data classified by the country of the foreign parent to facilitate comparisons with FDI data. If FATS entities are identified through linkages with FDI data or collected directly on FDI surveys, data on the country of foreign parent should be readily available.

ii. *Outward FATS.* MSITS 2010 recommends that the location of the foreign affiliate should be attributed to the country where the affiliate is resident. That is the country in which the foreign direct investor's commercial presence exists and where the various activities (sales and/or output, employment, etc.) tracked by the statistics are carried out. This is in contrast to the guidelines for FDI, which give two options for geographical attribution. According to BD4, if the ownership is through a directly held affiliate located in another country, the variables should be attributed to the country of that affiliate. BD4 recommends that supplemental statistics should be presented by the country where the affiliate is located. Because of the difficulties in tracking financial flows from the immediate counterparty to the ultimate destination, most countries attribute their FDI statistics to the immediate counterparty.

15.47. Attribution to the location of the affiliate is recommended in the OECD Handbook. In addition, it is consistent with the treatment of foreign-controlled enterprises in the 2008 SNA, in that the value added in production by the enterprise is attributed in both cases to the economy of location of the enterprise. In other words, it is included in the GDP of the economy where the enterprise is located.

B.5. Evaluating Validity of Reported Data

15.48. Survey processing staff will need to evaluate the reported data to ensure accuracy, consistency, and reasonableness. Techniques for this evaluation include comparing reported values for the current period to those for prior periods in order to ensure consistency, calculating ratios of key items, such as sales per employee or value added to sales, to ensure reasonable results, and establishing ranges and tolerances to identify outliers for review by survey staff. Automated checks can be included in an electronic questionnaire or in the survey processing system to detect unusual or large changes in the data, internal inconsistencies, or invalid responses. Staff can then resolve questions about the validity of reported data through consultation with respondents and other resources (e.g., financial statements, regulatory filings, and other surveys). It is also possible to have staff dedicated to evaluating the data reported by specific respondents. Establishing a relationship between the compiler and the reporter can lead to improved reporting.

15.49. Data that are missing or otherwise not reported by survey respondents can be imputed using statistical procedures such as the mean value reported by respondents with similar characteristics or the average change for such variables from the prior period. Imputation procedures are especially important for universe (benchmark) surveys that are designed to provide results for the entire population and that form the basis of future annual or quarterly surveys. In some cases missing values, if not provided by respondents during regular follow-up procedures, can be obtained from financial statements and commercial databases.

15.50. Validated responses provided by respondents at the individual company (micro) level must be aggregated to higher (macro) levels for further review and evaluation and ultimately public release. For universe (benchmark) surveys, validated micro data (including estimated values for non-respondents) can simply be summed over all units. For sample surveys or other non-benchmark surveys, aggregation of micro data will depend primarily on how the sample was selected and the associated sample weighting factors used to develop universe estimates.

15.51. For a probability sample with weights, individual values are multiplied by the weighting factor and the weighted values are summed. For cut-off surveys or other surveys that are not based on probability samples, aggregation may be based on using growth factors to extrapolate the aggregate value forward from the most recent benchmark year using values from a matched sample for adjacent years. This method assumes that the growth rates for the firms in the matched sample are representative of growth for firms that were excluded from the sample because they fall below the sample cut-off threshold.

B.6. Confidentiality and Suppression

15.52. For most countries, survey data are collected and published by statistical agencies with pledges of confidentiality in order to avoid disclosing information about individual companies in published statistics and proliferation to non-statistical agencies (like tax authorities). Multinational companies that by definition are involved with FDI and FATS may be particularly sensitive about such matters for competitive reasons. Even countries in which FDI and FATS data collection are mandatory maintain strict confidentiality. In the U.S, confidentiality extends to other government agencies, so that reports filed with US BEA cannot be used for purposes of taxation, regulation or investigation. Reported data may be used only for analytical and statistical purposes and is immune from legal process. US BEA is also subject to legislation aimed at minimizing respondent burden. As such, all forms are designed to avoid excessive burden and are subject to a period of public comment, which may include input from data users or survey respondents. In all cases when data for individual business enterprises are aggregated for publication, it is critical to ensure that data for individual firms cannot be disclosed because of a small number of firms in publication cells (See Chapter 20 for further details on the confidentiality issues).

B.7. Treating the Activities of Special Purpose Entities in FATS context

15.53. Special Purpose Entities (SPEs) are engaged in various activities and take various forms. Thus, compilers should pay attention to the treatment of SPEs in compiling FATS statistics. Although there is no precise definition of SPEs in the 2008 SNA, BPM6 and BMD4 these documents include some elements that help to better identify SPEs and their activities.

15.54. *Definition of SPE.* A unit is considered as an SPE, if it meets the following criteria:

- i. It is a legal entity:
 - a. Formally registered with a national authority³³⁰ and
 - b. Subject to fiscal and other legal obligations of the economy in which it is resident; According to the 2008 SNA,³³¹ a legal entity is one whose existence is recognized by law (that enables it to define and register itself) independently of the persons or other entities that may own or control it. Such an entity is responsible and accountable for the economic decisions or actions it takes or which are taken on behalf of the entity. The characteristics of a legal entity are: it owns goods or assets, it incurs liabilities, and it enters into contracts.
- ii. The entity is ultimately controlled by a non-resident parent, directly or indirectly;
- iii. The entity has no or few employees, little or no production in the host economy and little or no physical presence in the economy in which it is created by its parent which is typically located in another country;
- iv. Almost all the assets and liabilities of the entity represent investments in or from other countries;
- v. The core business of the entity consists of group financing or holding activities; i.e., channeling of funds from non-residents to other non-residents. However, in its daily activities, managing and directing plays only a minor role.

15.55. According to the 2008 SNA, judgment has to be made regarding the independence of an SPE as an institutional unit. However, non-resident SPEs owned by residents (and resident SPEs owned by non-residents), which are the main focus of foreign affiliate statistics, are treated as an independent institutional unit by convention. Given that those SPEs transact by their own decision, their transactions, in principle, should be recorded in the same manner as those of non-SPE foreign affiliates.

15.56. At the same time, however, SPEs are often established to facilitate cross-border ownership of enterprises and thus generally do not have any substantive activities in international trade in services. Thus, special treatment of SPEs in FDI and FATS statistics might provide economically more meaningful data and thus enhance their usefulness. For example, it would be relevant to separately identify SPEs and to compile supplementary data looking through certain types of SPEs.

15.57. According to BMD4, FDI transactions passing through a SPE generally do not have the expected immediate impact of direct investment concerning matters such as technology transfers, access to competitive markets, and poverty reduction in the SPE host countries. As a consequence, users are more and more interested in series segregating transactions and positions of SPEs, which are purely pass-through capital, and which render the data difficult to interpret for policy or other decision making processes. Therefore, in standard presentation of FDI according to the benchmark definition, countries should explicitly separate FDI statistics on resident SPEs and non-SPEs for reporting according to the directional

³³⁰ This excludes non-resident unit that have been registered for VAT purposes only, which may be the case in some EU-countries acting as hub for the imports of goods to the European Union.

³³¹ SNA 2008, paragraph 4.6.

principle.³³² If the non-resident counterpart of FDI is an SPE, countries are encouraged to look through the country where it is located, and to reallocate on a supplementary basis the reported amounts to the country of the direct investor or direct investment enterprise corresponding to the first non-resident non-SPE encountered. When the reporting SPE is part of a chain of entities, the reallocation should aim at the first non-SPE encountered. Countries are encouraged to provide supplementary breakdowns of positions and transactions on the basis of first non-SPE counterparts.³³³

15.58. Nevertheless, some SPE type entities are engaged in other activities in services than just passing through funds, and such types of entities should not be ignored in FATS statistics. The appropriateness of looking through SPE type entities depends on the types of their activities. Identifying their activities is not straightforward but one way of doing so is to classify SPEs according to the 2008 SNA sector classification assuming that such classification is conducted by statistics compilers of host countries.

15.59. Among various types of SPEs, holding corporations, shell companies and conduits are often established only to channel the funds from non-residents to non-residents. Thus, supplementary data looking through such pass-through entities could be useful for users of SITS related to foreign affiliate, in particular FATS. In contrast, royalties and licensing companies, merchanting companies, and securitisation companies are engaged in non-captive financial and non-financial activities. The other types of SPEs provide financial services although most of them are captive financial corporations. Thus, these non-pass-through entities should not be looked through.

15.60. *Data collection on SPE.* Data collection of SPEs poses problems as they often do not have physical existence. For SPEs established abroad by resident parents, compilers will be able to inquire those parents to provide information on foreign SPEs. In contrast, data collection of resident SPEs established by non-resident parents is not easy because compilers usually have no legal basis for asking non-resident parents to provide information on resident SPEs. It is important, therefore, to develop country's data collection system such as the economic census or business structure statistics so that resident SPEs are identified and data collection on them becomes feasible (see Chapter 6 for the discussion on enterprise and establishment surveys).

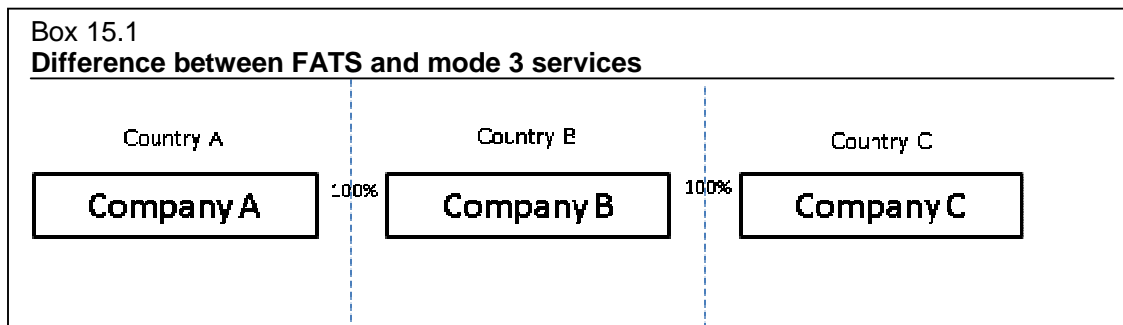
B.8. FATS and mode 3

15.61. Mode 3, or commercial presence, trade in services is difficult to measure using traditional collection methods as the relevant entities (for exports) are not residents of the compiling economy. Mode 3 also relies on integrating different data sources, which also adds to the difficulty in measuring this.

15.62. Mode 3 services data should be collected by service type as well. If data by service type is difficult to collect, you can estimate the most likely type of service being provided according to the industry of the company. For example, a company in the telecommunications industry is likely to have been set up abroad to provide telecommunication services. Such information is closely related to FATS data, and can be collected in conjunction with FATS data if possible.

³³² Benchmark Definition of FDI, 4 edition (BMD4), paragraph 316.

³³³ Ibid., paragraph 319.



15.63. FATS data will include variables such as turnover or sales. Mode 3 services are a subset of a company's sales figures. As shown in box 15.1, company B's sales of services within country B are exports of services through mode 3 for country A. Company B's sales of services to the rest of the world are part of sales figures as a FATS variable, but are not included as country A's mode 3 services exports. Similarly, Company C's sales of services within country C are exports of services through mode 3 for both country A and country B.

[Additional text is to be inserted here on the compilation of the number of mode 4 persons as part of FATS/FDI surveys.]

[Additional text is to be inserted here on business structure; that is, the difference in Modes between large and small companies and the importance of foreign controlled enterprises or enterprises with FDI.]

C. Country Experiences

C.1. Country experience: European data compilation on the FATS statistics

15.64. The legal framework for the provision of foreign affiliate statistics in the European Economic Area (EEA) is the Regulation No. 716/2007 of 20 June 2007. In addition, Eurostat publishes the FATS Recommendations Manual, which provides a common methodological framework on the definitions and concepts to national compilers in order to produce a harmonized set of FATS data across the Member States. Having a comparable set of the FATS data is a pre-condition to compile meaningful, reliable and high-quality European aggregates.

15.65. IFATS and OFATS data are collected from the European Member States, candidate and EFTA countries on an annual basis, data collection has been mandatory starting with the reference year 2007.

15.66. One of the most important concepts to be followed when looking at the European statistics is that FATS should be compiled according to the ultimate controlling institutional unit (UCI) concept. The UCI means the institutional unit (enterprise, branch), proceeding up a foreign affiliate's chain of control, which is not controlled by another institutional unit (enterprise, branch).

15.67. *UCI - when information not available in a register or not directly collected.* Identifying the UCI plays a crucial role as all data for foreign affiliates under direct or indirect control should be attributed to the country of the UCI. If the information on the UCI is not available from the existing data, the European statistics on FATS follows a general

rule, which says that the identification of the UCI should be based on a step-by-step analysis of control relationships up the owner chain in the enterprise group. Once the top enterprise of the group is identified, the ability of its decision-taking must be examined, too.

15.68. In fact, the UCIs, which cannot be identified, belong mainly to the small and medium-sized enterprises. Usually large groups have complicated structures, whereas SMEs tend to have more simple structures and the immediate owner is often the ultimate owner.

15.69. Almost all Member States underlined that multinational enterprises, which contribute to a large extent to the final results, are in general much better motivated to respond to the survey than smaller enterprises. Several methods of reducing non-response are applied. Most of the countries use written and/or telephone reminders to non-respondents. Legal measures (e.g. fines) are available to those data compilers that have a legal basis for the survey and where completing the questionnaire is compulsory. However, such measures are considered only the last resort, since good contacts to businesses are important for all future data requests, including for other statistical domains. Still, even if the non-weighted non-response rate may in some cases be high, the actual missing part in the statistics is far less significant.

15.70. An important source for identifying affiliates and allocating them to the UCI should be in the future the EuroGroups Register (EGR), which is under development. The EGR should cover step-by-step all multinational enterprise groups operating in the European Union. This will help to align the correct country code of the UCI, to which the enterprises belong. With a full and well developed EGR, no double counting or gaps would exist and the same data sets from different compilers would be linked.

15.71. *Treating the activities of special purpose entities.* In the European statistics, special purpose entities are relevant for both inward and outward FATS.

15.72. There is no single way or approach how they should be treated, even though the main principle to be followed is that the SPEs should not be automatically excluded from the target population as they carry out important economic transactions with their respective parents or associated enterprises. SPEs should be excluded only if they had no turnover and no employment during the reference period.

15.73. *Evaluating the validity of reported data.* Validation of data is performed by the national data providers as well as by Eurostat. Through this process the plausibility of the data (e.g. the development of time series, possible outliers) and their internal consistency (aggregates should match the sum of the sub-items) is verified.

15.74. *Confidentiality and suppression of data.* It has been agreed with the Member States that to prevent a dataset containing confidential cells from to be released, a primary confidentiality treatment is performed by the National Statistical Authorities that provide data to Eurostat. As a next step, a secondary confidentiality treatment is applied to eliminate indirect disclosure.

15.75. For inward FATS, data providers are responsible for sending both the primary and secondary confidentiality flags on their national data. The situation is different for outward FATS where flagging for secondary confidentiality remains a voluntary request, even though it is strongly recommended. Data providers may apply primary confidentiality settings and let Eurostat perform the secondary confidentiality treatment, or apply both primary and secondary confidentiality treatment. Up to now, one third of Member States treat the data for

secondary confidentiality. Disregarding whether the datasets are provided by the Member States with primary confidentiality settings only or with additional secondary confidentiality settings, Eurostat checks data for disclosures anyway and if needed it completes or modifies the secondary confidentiality flags.

15.76. For both inward and outward FATS, Member States can apply different rules for identifying primary confidential data.

15.77. In inward FATS, most of them use jointly the frequency method (data are confidential if they were reported by less than a fixed number of reporting units) and the dominance method (suppressing cells where the share of 1 or 2 largest enterprises is higher than affixed percentage). The threshold (minimum number of reporting units for data to be free for publication) applied in the frequency method was 3 for most of the countries, whereas the maximum percentage of dominance varied between 70% and 99%.

15.78. In outward FATS, one third of countries define the primary confidentiality depending on the fixed number of statistical units and another third of countries combine the number of statistical units with the dominance criterion. A few countries apply primary confidentiality based on the number of reporting units as a single criterion, or in combination with the dominance criterion. Usually, the threshold below which data in a cell were flagged confidential is 3, for both statistical and reporting units. For those countries that apply the dominance criterion, the data in a cell is flagged confidential if one unit in that cell represents at least 70% or more of the value of the cell.

15.79. As for the EU aggregates, the secondary confidentiality pattern depends on the confidentiality pattern of the national data, and only non-confidential data are published. EU aggregates are calculated using available data as well as estimated data by Eurostat for missing Member States. The estimates are not published but they just enter in the composition of the EU aggregates.

15.80. *Specific issues for the compilation of FATS.* Institutional arrangements for the collection of FATS can be complicated as often the responsibility for compiling FDI statistics can reside with the Central Bank while the responsibility for FATS statistics can reside with another office, such as the national statistical office. As a result, it is important that institutional arrangements assign clear responsibilities for data compilation and allow for data sharing between the different agencies. Such arrangements will improve the quality and usefulness of the statistics produced.

15.81. *Specific issues for the compilation of inward FATS.* In the EU countries inward FATS data are usually extracted from the data sources used for the Structural Business Statistics (SBS) and the results for both domains should be consistent. Some Member States have registers of enterprise groups or foreign-owned enterprises that can be used as a basis for identification of the population of foreign-controlled domestic enterprises and these registers are treated as the main source of information used to identify the target populations. However, in practice, this consistency is not always assured. One of the main reasons is that there are sometimes considerable differences between the frame populations used for the inward FATS data collection and the foreign-controlled subset of Structural Business Statistics population. This shouldn't be a problem unless there are correct grossing-up methods used. In that case, the total number of all enterprises, including domestic-controlled ones should be equal in both SBS and inward FATS.

15.82. The strong link between the SBS and inward FATS also exists when validating and treating the data for confidentiality. Inward FATS data, as a subset of the SBS population, is usually compiled and delivered to Eurostat 2 months after the SBS variables had been transmitted and this implies that the treatment for confidentiality of inward FATS data must be in line with the confidentiality pattern used for the SBS.

15.83. *Specific issues for the compilation of outward FATS.* Contrary to inward FATS, the target population of statistical units (on which data are collected) and the target population of reporting units (from which data are collected) are not equal in outward FATS. Thus, the target population of reporting units contains all resident institutional units that control affiliates abroad, whereas the target population of statistical units is composed of all foreign affiliates that are controlled by an institutional unit resident in the compiling country.

15.84. In order to create the two target populations, a great variety of sources, often complementing each other are used by the national data compilers. Frequently, the basic information originate from the FDI registers and surveys and it is completed with information from other data sources such as business registers, annual reports of the companies, private databases, administrative sources, or other surveys (inward FATS, SBS). There are also cases when the data compilers are not at all or to a little extent dependent on FDI sources, the main sources being the national business or enterprise group registers, the EGR, or a combination of these sources.

15.85. As discussed above, outward FATS should include all controlled foreign affiliates, regardless of whether the control in the affiliate is held directly or indirectly through a chain of ownership and regardless of whether the direct investor in the compiling economy is the UCI unit or is, instead, an intermediate investor in an ownership chain. However, this would lead to the activities of an affiliate held through an ownership chain being recorded in the FATS of both the ultimate and the intermediate investors. So, to facilitate international aggregation without double counting, compilers are strongly encouraged to identify the aggregate share of FATS variables accounted for by enterprises for which the compiling country is the ultimate controller.

15.86. The outward FATS characteristics are usually collected based on surveys. In general, questionnaires are sent to all units identified as belonging to the target population of reporting units for periodic censuses of outward FATS. In between, censuses, countries conduct sample surveys. Although not recommended, cut-off thresholds are applied by a few countries. For practical reasons (reduction of the costs and the burden) such thresholds can nevertheless be considered acceptable as long as they are kept at minimum and estimations are provided for the population under the threshold.

C.2. Country experience: Austria

15.87. Cross-border direct investment has risen at an extraordinary pace since the late 1980s and has become a key instrument of economic globalization. The standard globalization statistics on corporate cross-border holdings previously were the foreign direct investment (FDI) statistics within the framework of the balance of payment statistics. FDI statistics are primarily focused on the financial aspects of globalization. However, given the increasingly complex structure of multinational corporations and increasing numbers of holding and shell companies, the amounts of capital invested must not necessarily be equated with economic activities. Consequently, the 5th edition of the IMF's Balance of Payments Manual noted that the balance of payments failed to adequately reflect a number of policy-relevant aspects of

direct investment, indicating that policymaking might be greatly facilitated by additional corporate surveys collecting data from balance sheets and activity measures, like sales, employment, imports, exports or value added figures, etc.³³⁴.

15.88. Given these recommendations, the Oesterreichische Nationalbank (OeNB), which is responsible for compiling balance of payments statistics in Austria started at a very early point to collect additional indicators of economic activity. However, in the absence of full-fledged requirements, a uniform, internationally-comparable statistical framework was still lacking. Based on preparatory work of the OECD, the EU finally issued a regulation in 2007 that established a common framework for the systematic production of annual statistics on the structure and activity of foreign affiliates, the FATS-statistics.³³⁵

15.89. The implementation of FATS statistics in Austria was mandated by the so-called *Auslandsunternehmenseinheitenstatistik-Verordnung*,³³⁶ referred to below as the FATS regulation. This regulation provides for the full-fledged national implementation of the European legislation but also contains additional provisions that have been designed to increase the relevance of FATS statistics at the national level. For legal and practical reasons, the reporting units for the FATS statistics are resident units, not only for the inward FATS statistics (namely resident affiliates under foreign control) but also for the outward FATS statistics (namely resident enterprises – or resident individuals, foundations and other investors – that control affiliates abroad).

15.90. The FATS regulation cites Statistics Austria as being responsible for compiling the FATS statistics for Austria. Under Article 6 of the regulation, Statistics Austria is, however, required to procure any existing administrative records and statistical data to keep the reporting burden low. Consequently, the OeNB's data on FDI are to be aligned with primary data collected by Statistics Austria to develop the features required for the FATS statistics. Separate surveys are permissible only where secondary data would not provide for meaningful FATS indicators. The FATS statistics thus opened up a new area of collaboration in the traditional cooperation between the OeNB and Statistics Austria, e.g. on balance of payments, national accounts statistics and the reconciliation of registers.

15.91. *Inward FATS Statistics.* The two major sources of the inward FATS statistics are the comprehensive structural business statistics that Statistics Austria collects and the direct investment survey that the OeNB conducts. Foreign-controlled enterprises are a subset of direct investment enterprises, which also include minority holdings above a 10% threshold and below the 50% majority holding level. The fact that the OeNB has, for many years, compiled direct investment information on a per-enterprise basis and has included a question on the “ultimate controlling investor” (UCI) in its survey, allows the OeNB to analyze multiple minority ownership structures and to establish the country in which the ultimate parent is located, as is required for FATS statistics.

15.92. As the OeNB's direct investment survey includes only enterprises above a certain threshold, instances of foreign-controlled ownership below the threshold need to be identified for the inward FATS statistics in a *second* step. This is done by an automated

³³⁴ BPM5, paragraph 384.

³³⁵ Regulation (EC) No 716/2007 of the European Parliament and of the Council of 20 June 2007 on Community statistics on the structure and activity of foreign affiliates, OJ L 171, 29.6.2007, page 17.

³³⁶ Verordnung des Bundesministers für Wirtschaft und Arbeit über die Statistik der Struktur und Tätigkeit von Auslandsunternehmenseinheiten (*Auslandsunternehmenseinheitenstatistik-Verordnung*), Federal Law Gazette II no. 345/2008 of 30.9.2008.

analysis of the administrative Company Register data. However, the information available there does not allow us to determine whether the corporate headquarters of these generally small enterprises are located in a third country or not; therefore the country in which the institutional unit exercising immediate control is located is, by default, considered the country of ultimate control.

15.93. In a *third* step, the enterprises under direct foreign control determined on the basis of OeNB surveys and IT-based analyses of Company Register data are checked for any first and second-tier affiliates they may have in Austria. To this end, an algorithm is applied to Company Register data to establish, in a step-by-step procedure, all majority holdings in Austria of the enterprises identified thus far. The process described above enables the OeNB to eventually submit an exhaustive list of all resident foreign-controlled enterprises to Statistics Austria.

15.94. Statistics Austria's first task is to link the OeNB's list of enterprises with the entries in its own business register. This is feasible using three common identifiers, namely the OeNB's internal key, the NSIs unit identifier, and the official company code which is stored in the public Company Register. These identifiers are available in both data-bases, thanks to a long standing practice of the mutual exchange of register information (including name address, and economic activity of the unit). Usually 100% of the units can be matched automatically, without any manual intervention.

15.95. Next, Statistics Austria once more checks the data, thereby eliminating "*inactive*" business units from the OeNB's list. Such inactive units may appear if they have not yet started economic activity or if enterprises are being liquidated. In some cases, control relationship may be unclear – e.g. where a change of ownership occurs during the reference year – and may be corrected at this point in time.

15.96. The most important step is then to retrieve the required characteristics for inward FATS from the existing database for structural business statistics. The values in this database may be either a direct result from the SBS survey, if the enterprise in question was part of the sample, or they may be imputed data, based on regressions with employment and turnover as exogenous variables, if the relevant enterprise was *not* part of the sample. In any case, the data used for reporting inward FATS statistics are exactly the same as for SBS statistics, which is an important aspect of quality.

15.97. Every second year, the data is supplemented by information about the R&D activities of foreign affiliates in Austria. These R&D characteristics of foreign affiliates are to be derived from the available R& D statistics by linking data sets at the individual enterprise level.

15.98. *Compilation of Outward FATS Statistics.* Compiling outward FATS statistics was not possible in the end without increasing the reporting burden for enterprises, although the number of characteristics required is much more limited compared to inward FATS. While turnover and employment figures have been collected for direct investment statistics in the past by the OeNB, coverage was limited to first and second-tier affiliates abroad. For the new outward FATS statistics, it was thus necessary to adapt the questionnaire to the new requirements. Specifically, it became necessary to collect the company name, address, employment and sales figures of *all* enterprises abroad controlled by Austrian investors, irrespective of the length of the chain of control. This increased the reporting burden above all for a small number of big reporting entities with a complex web of cross-border holdings,

but for the bulk of enterprises required to report FATS data, the change has been minimal. Nevertheless, any increase in reporting requirements of the FATS-regulation necessarily would increase the reporting burden proportionately.

15.99. While in the case of inward FATS statistics there are administrative records available which can be used to ensure the completeness of data sets, the outward FATS statistics more or less rely on the replies of the surveyed investors. Fortunately, the European Groups Register (EGR), which is under development by EUROSTAT, will allow for cross-checking with information which is available from commercial sources and from counterpart countries (NSIs).

15.100. In Austria the outward FATS survey applies a reporting threshold, yet – given the lack of a well-defined “statistical population”– the final data are not adjusted with separate estimates for any entities not included in the survey. Consequently, the outward FATS data are subject to an unknown degree of underreporting; however, such underreporting probably has a material impact only on one variable, namely the number of enterprises, while employment and turnover are probably well covered as the thresholds are rather low.

15.101. For the outward FATS statistics, the OeNB delivers a finished company-by-company data set, which in theory needs no further processing. By means of aggregation, including procedures to identify the possible confidentiality of certain data-cells, Statistics Austria finally creates aggregated data sets in line with national and international provisions.

15.102. With this methodology, based on a close co-operation between the Central Bank and the Statistical Institute, it was feasible in Austria, like in a number of other European countries, to provide a completely new, much needed piece of information almost without any additional reporting burden and with a minimum of additional resources for the compiling agencies.

C.3. Country experience: Hungary

15.103. The inward and outward FATS are compiled by the Hungarian Central Statistical Office in the Business Statistics Department from the reference year 2003 as a pilot study and from the reference year 2007 compulsory.

15.104. *Inward FATS.*

Data sources of the target population:

- i. In the Hungarian Central Statistical Office different data sources are used to compile inward FATS concerning the FATS Regulation.
- ii. Business Register: Every resident legal unit in Hungary is listed in the Business Register but the structure of ownership and the UCI are not known concerning the reference year of the data collection. The enterprise Group Register is under development.
- iii. Corporate tax return: It contains information on the rate of foreign direct investment, so legal units with foreign capital are sorted out from tax database. The information on the structure of ownership that is needed to define the hundred percent of the FATS population is not available from the tax database.

- iv. FDI questionnaire: The adequate information to specify the population comes from FDI questionnaires, but only the large enterprises are in the FDI survey.
- v. EGR: From the reference year 2011 we use the EGR to define the missing units from the target population.

Data sources of the economic information

- vi. NACE Rev.2. section B-N excl. K The economic information comes from the SBS database. The FATS population is linked with SBS data by identity code. The sources of the SBS data are: Data collection by statistical survey (if the number of persons employed is more than 19) and Tax returns (if the number of persons employed is less than 20 or in case of the non response enterprises).
- vii. NACE Rev.2. section K Hungarian Financial Supervisory Authority (HFSA) and Tax returns.

Sources of the UCI

- viii. Enterprises with more than 4 million EUR of turnover.
- ix. Internet: It is used for updating the UCI and detecting unknown UCI of the enterprises.
- x. EGR: We impute the UCI country code from EGR.
- xi. Enterprises with less than 4 million EUR turnover.
- xii. EGR We imputed the UCI country code from EGR.
- xiii. Internet: We defined the UCI of the elements of a sample by Internet.
- xiv. Registry Court: We examined the sample whether the UCI of the small enterprises is equal with their FDI. The conclusion is that in 88% of the sample the UCI equals with FDI. So we input the available country code from the database of Registry Court.
- xv. Imputation: We look for a donor enterprise with a mathematical process to impute the missing UCI.

15.105. Outward FATS: The Hungarian owned enterprises have only a few affiliates abroad. Sources of the data compilation are as follows:

- i. Target population: 100% by FDI questionnaire, economic information: 100% by FDI questionnaire, UCI : 100% by inward FATS database.
- ii. Annual Report of Capital Investments is collected by National Bank of Hungary. The outward FATS variables are on this questionnaire.

iii. To define the UCI we link the outward FATS population with the inward FATS database.

iv. The direct investment of the mother companies (reporting units) in the foreign affiliates is more than 40.000 EUR and more than 50 percent. The reporting units with less than 40. 000 EUR direct investments are not in the FDI target population (it would be too much costs and burden with too few results).

v. The reporting units with less than 50 percent of FDI in the statistical units do not have any effect on the affiliates to fulfil the questionnaire. There is no grossing-up. It is difficult to estimate the share of the population under the threshold. They are small enterprises, so they do not have significant effect on the aggregate figures.

C.4. Country experience: Spain – compilation of outward FATS

15.106. *Objectives and need for operation.* The main objective to be achieved with this statistical operation is to provide accurate, reliable and timely key features that determine the structure and activity of the subsidiaries of Spanish companies operating abroad, both in industry and in the construction and non-financial services.

15.107. To evaluate the impact and role of Spanish-controlled enterprises in the global economy, it is essential to have regular quality statistics provide information about the structure and activity of the Spanish subsidiaries of foreign companies.

15.108. Multinational companies do play, and will continue to play, a key role in the process of progressive integration of national economies as a result of economic globalization; small and medium enterprises are also, to some extent, affected by foreign control. Therefore, it is necessary to dig deeper into this phenomenon and to investigate it in order to precisely define its importance for each subgroup of companies. Moreover, when making economic policy aimed at issues such as competitiveness, employment, company policies or research, it is desirable to have statistical information on foreign subsidiaries in order to evaluate the effects that foreign control may directly or indirectly have on employment, wages and productivity in certain countries and sectors.

15.109. In this sense, and in order to respond adequately to the increasing demand for statistics on the phenomenon of subsidiary companies, the European Union Regulation (EC) No 716/2007 of the European Parliament and of the Council of June 20, 2007, which concerns statistics on the structure and activity of foreign affiliates (FATS), was approved. This regulation establishes a common framework of action for conducting statistical research on subsidiaries in the EU countries and sets the key features to consider, both from the point of view of the variables to analyze and geographical breakdowns by industry or requested, as in regard to the measures necessary to ensure the quality of the data obtained.

15.110. The FATS Regulation contains two separate annexes dealing with the study of the subsidiaries from complementary perspectives: Inward and Outward FATS. Each of these implies different objectives, scope, variables and different reference periods. Inward FATS is focused on the study of foreign affiliates in each country and Outward FATS investigates national affiliates abroad.

15.111. The statistic of Spanish subsidiaries of foreign companies (FILExt) is designed with the aim of meeting the demand requested in Annex of the regulation Outward FATS (i.e., the

investigation of Spanish affiliates abroad), in the field of industrial, construction and non-financial services.

15.112. *Methodological framework: Administrative Data Source.* INE has long recognized the importance of indicators of Spanish subsidiaries of foreign companies and has carried out several pilot studies or surveys on subsidiaries abroad in the years before entry into force of the European regulations, which have helped to clarify concepts, improve processes, evaluate methodologies and highlight the potential limitations associated with an investigation of this nature.

15.113. During the implementation process of this statistical methodology, we evaluated other alternatives to data collection by specific surveys designed to reduce the administrative burden and response of respondents as much as possible. Indeed, the complexity and detail of the information required in this type of survey and the increasing burden on the companies involved, has encouraged methodologies based on the use of administrative records, which could deliver the information necessary for the processing of the results required by European regulation without thereby increasing the response burden on respondents. Note that reducing the statistical burden is a strategic objective of the INE and that, within this line of action, one of the theoretical principles to consider when starting and developing new statistical projects is promoting the use administrative data and prioritizing them in relation to the collection in the field, whenever a reliable and timely administrative source from which they can effectively meet research objectives is available.

15.114. Consistent with this view, and in parallel with the pilot studies, the INE explored the possibility of obtaining the information from the Foreign Investment Registry of the Ministry of Economy and Competitiveness (MINECO). This Register is formed from statements by the Directorate General for Trade and Investment, and more specifically the Directorate General of International Trade in Services and Investment, collected about foreign investment in Spanish companies and Spanish investment in foreign companies, both as regards flows and stock.

15.115. Specifically, in the case of Spanish investment stock in foreign companies, Spanish resident investors that make investments in foreign companies whose net worth exceeds 1,502,530.27 euros (or the equivalent in the currency in which it is expressed) and in which the investor's share capital or total voting rights are equal to or greater than 10%, must submit an annual report on the development of foreign investment in the first nine months of each calendar year (model D-8). Also included in this report is the investment in foreign companies whose activity is the holding of shares in the capital of other companies, regardless of the amount of the investment. Holders of foreign branches also report the size of the investment in the annual report.

15.116. Information is obtained from the companies in which the investor invests and in turn, investee companies. Finally the third level of the chain of participation in subsidiaries is reached, although less detailed information from the latter is collected.

15.117. The Foreign Investment Registry covers Foreign Direct Investment in Spain and Spanish Direct Investment Abroad, published annually and included in the National Statistical Plan (PEN), and presents Foreign Direct Investment in Spain and Spanish Direct Investment Abroad quarterly and bi-annually as well as the PEN.

15.118. Foreign Investment Registry statistics are also obtained on Spanish Investment in Foreign Securities and Foreign Investment in Transferable Securities Spanish, both flows and position. In meetings between the two institutions involved (MINECO and INE), officials discussed the methodological alternatives, implement procedures and legal issues arising from the eventual transfer of the relevant files.

15.119. Further analysis of the information provided by the Register and comparative studies conducted with pilot surveys highlighted the quality and wealth of information, as well as the role it could play as a source of primary data to meet the objectives of FILExt.

15.120. Finally, after the evaluation of the various advantages and limitations associated with each of the procedures, the administrative source was chosen as a more effective means of achieving the objectives of this research. However, it should be noted that while the data derived from said Investment Register are considered as the primary basis for generating key information, the data has been supplemented with information from the European Register of Groups (*) in order to obtain the final results of the investigation.

15.121. It should be noted that the coverage of branches in the Investment Register is not complete as far as the population of subsidiaries are concerned, because according to the current rules, companies are not required to declare investments in companies with assets of less than EUR 1,502,530.27 in the relevant administrative forms. The results of the subsidiaries from the third level of the chain of participation are not shown either. It has therefore been necessary to perform additional processing and estimation taking into account European Register of Groups (information on enterprise groups from private databases and records units in the statistical offices of the individual Member States and the countries of the EFTA) to measure the activity of these subsidiaries and through appropriate adjustments, to derive the final results of the statistic.

15.122. In conclusion, the statistical design for the primary data generated from the Foreign Investment Registry of the Ministry of Economy and Competitiveness that FILExt established, can reduce the statistical burden on enterprises to comply with European regulatory requirements while allowing for national dissemination of the main results on Spanish subsidiaries abroad.

15.123. *Areas of research.* SCOPE POPULATION. The population for this statistic is comprised of companies resident outside Spain which are subsidiaries of Spanish companies and whose main activity is included in Sections B to E (industry), F (construction) and G to S, except K and O (non-financial market services) of the National Classification of Economic Activities 2009 (NACE-09).

15.124. It is understood that the subsidiary company resident outside Spain is controlled by a Spanish company. According to the Manual of Recommendations on Statistics of Subsidiaries "Foreign Affiliates Statistics (FATS)" prepared by the Statistical Office of the European Union (Eurostat) with the collaboration of the various member states, control is defined as the ability to determine the general policy of an enterprise by choosing, if necessary, appropriate directors. In that sense, Company A is considered to be controlled by the institutional unit B when B controls, directly or indirectly, more than half of the shareholder vote, or more than half of the shares of Company A. At times, this control can be exercised via effective minority control without owning more than half of the shares or voting rights if the percentage, for example, despite being less than 50%, is higher than that of any other owner. The control can also be exercised by a government through an ordinance

or regulation that confers the ability to determine the policy of the company or the election of directors. Indirect control is implied when control is exerted not directly, but through another subsidiary over which you have control. That is, if company A controls another B, and this in turn controls a third company C, it follows that firm A indirectly controls the company C.

15.125. The details of activities (sections) of the CNAE09 that constitute the population of the area under study cover section B-S, except for O.

15.126. In accordance with the methodology established by Eurostat and described in the manual recommendations, Member States should apply the criterion of ultimate owner (UCI - Ultimate Controlling Institutional unit).

15.127. The ultimate owner of a subsidiary is the institutional unit or company, proceeding hierarchically upward in the chain of control of that subsidiary, exercises control over it and is not in turn being controlled by any other unit. Therefore, each country should provide the results of foreign subsidiaries whose parent or ultimate owner is resident in its territory.

15.128. Therefore, in our case, only results of overseas subsidiaries with a Spanish parent or ultimately Spanish owners are included in this statistic. This approach results in homogenization at the European level, thus avoiding gaps or duplication of information between Member States.

15.129. *Geographical.* From the geographical point of view, the statistics refer to subsidiaries resident outside Spain, both within the EU and beyond.

15.130. *Time Frame.* These figures are annual and economic data are obtained annually and refer to the relevant reference year.

C.5. *Country experience: Germany*

15.131. In Germany the compilation of Outward FATS is closely linked to the compilation of the FDI stock statistics. FDI stock statistics are based on reports by domestic enterprises and individuals on “Residents’ assets in foreign economic territories” which have to be submitted to the Deutsche Bundesbank once a year. The contents of the compulsory reports are defined in the Foreign Trade and Payments Regulation.

15.132. For the compilation of the yearly FATS figures all reports about directly and indirectly majority-owned direct investment enterprises (including branches and permanent establishments) abroad of German investors, who are the ultimate controlling units, are taken into account. There is a reporting threshold of € 3million according to the balance sheet total of the direct investment enterprise, but no grossing-up of the figures. As variables for FATS turnover and the number of employees is included in the FDI stock survey and therefore available on an individual enterprise level with an economic sector breakdown according to NACE, rev. 2 or ISIC 4 together with a detailed country breakdown. The number of enterprises is a by-product of the data collection. The data refer to the fiscal or accounting year of the direct investment enterprises. Confidentiality rules have to be obeyed. Only aggregates with figures of at least three direct investment enterprises and direct investors, respectively, may be published. A revision of data is performed for the last reference period 12 months later.

15.133. In the case of banks and insurance companies as direct investment enterprises special definitions of “turnover” exist as follows:

- i. For *banks* instead of the value for annual turnover the annual output is reported, calculated as Net interest received + current income from shares and other variable rate securities + commissions received + net results of financial operations + other net operating income.
- ii. For *insurance companies* instead of the value for annual turnover gross premiums written and assumed under insurance contracts are to be reported.

C.6. Country experience: Hong Kong, China

15.134. Foreign affiliates covered in FATS of Hong Kong refer to “majority-owned foreign affiliates (MOFAs)”, which are defined as companies with a single foreign investor, or an associated group of foreign investors acting in concert, owning more than 50% of the voting power.

15.135. In 2006, Hong Kong released the first set of inward FATS data. A feature article for the release of inward FATS data is published annually on the website of the Census and Statistics Department (www.censtatd.gov.hk) about 18 months after the reference year. In addition to the number of MOFAs in Hong Kong, key operating characteristics of these foreign affiliates including employment, value added, business receipts and other income, compensation of employees and operating expenses are analysed by immediate investing country, ultimate investing country as well as selected industry groups of the MOFAs.

15.136. While the immediate investing country of an MOFA is the country of the first foreign parent in the chain of ownership of the MOFA, its ultimate investing country is the country of the first enterprise in the chain of ownership that is not controlled by another enterprise (i.e. no other unit holds more than 50% of the voting power of the ultimate controlling institutional unit). The ultimate investing country is the country that ultimately controls an MOFA, and therefore derives most of the benefits from controlling the MOFA.

15.137. The immediate investing country of an MOFA is not necessarily the same as its ultimate investing country. Among these MOFAs, some in Hong Kong can have other Hong Kong companies as their ultimate investors.

15.138. Hong Kong's inward FATS statistics are compiled based on: (a) Data of establishments collected through the Annual Survey of Economic Activities (ASEA) ; and (b) Information on source of external investment as obtained from the sampling frame of the Survey of External Claims, Liabilities and Income (SECLI).

15.139. Both ASEA and SECLI are conducted by the Census and Statistics Department on an annual basis. The ASEA collects annual data on the structural and operating characteristics of various industries in Hong Kong, which cover basically all major economic sectors except the “agriculture, forestry and fishing” industry and some organisations in the “social and personal services” industry. MOFAs identified via SECLI are matched against the ASEA sample for analysing the operating characteristics of MOFAs in Hong Kong. SECLI is an integrated survey that collects financial data, such as direct investment, portfolio investment, financial derivatives and other investment, for compiling the Balance of Payments accounts of Hong Kong. The frame of this survey provides information on

enterprise structure through which MOFAs operating in Hong Kong as well as their immediate and ultimate investing countries can be identified.

15.140. Inward FATS data should be interpreted with caution to take note of the following aspects: (a) if a company is identified as an MOFA, figures relating to its operating characteristics are entirely included in the inward FATS; no apportionment by percentage of source of investment is made to its contributions; (b) Economic contributions of MOFAs in the “agriculture, forestry and fishing” industry and the “social and personal services” industry are assumed to be negligible.

15.141. At present, Hong Kong’s outward FATS data are being collected and compiled for review on a trial basis. The more complex collection of data from Hong Kong companies on their affiliates located outside Hong Kong is conducted annually through SECLI by the Census and Statistics Department. Key variables involved include the number of affiliates, employment and turnover of affiliates in major countries that are controlled by companies in Hong Kong.

C.7. Country experience: Vietnam

15.142. In Vietnam data on foreign direct investment enterprises are collected and compiled through an Annual Enterprises Survey (AES) conducted by the General Statistics Office (GSO) since 2003. AES cover all FDI enterprises in Vietnam. According to the results of Establishment Census 2012, number of FDI enterprises is 9500. The separation out of GATS FATS enterprises from the list of FDI enterprises could be presented using the criterion of over 50% foreign ownership. So Department of Trade and Services Statistics (GSO) can compile the data of the Inward FATS.

15.143. The statistical unit of the inward FATS statistics in Vietnam is *enterprise*. Nearly all twelve inward FATS variables can be obtained from the Annual Enterprise Survey data. The FATS variables which are presently collected by the Annual Enterprise Survey include: basic variables such as sales, turnover, output, employment, and additional variables such as: assets; net worth, operating surplus, gross fixed capital formation, taxes on income; R&D expenditure, compensation of employees. Beside these variables, some more detailed indicators of main activity of FATS enterprises can be also compiled based on the data filled in questionnaire of result on main activity as manufacturing, construction, distribution, transportation, financial services, insurance and some others. All above variables can be compiled, is also published annually comprising different detailed tables breakdown by country/kind of activity; kind of activity/country.

15.144. The data of Exported/Imported goods are collected from the Customs resource through matching customs database and enterprises survey database based on the tax code of each enterprise which is provided by tax office/register office whenever the enterprises finished all register schedules. The data of service exports and imports of some enterprises are collected through ITS sample survey quarterly/annually.

15.145. The classification of enterprises by type of activity was determined in accordance with the Vietnamese Standard Industry Classification of Economic Activities 2007 (VSIC 2007). The sectors covered in the inward FATS of Vietnam are:

- i. Section B: Mining and quarrying
- ii. Section C: Manufacturing

- iii. Section D: Electricity, gas, steam and air conditioning supply
- iv. Section E: Water supply, sewerage, waste management and remediation activities
- v. Section F: Construction
- vi. Section G: Wholesale and retail trade; repair of motor vehicles and motorcycles
- vii. Section H: Transportation and storage
- viii. Section I: Accommodation and food service activities
- ix. Section J: Information and communication
- x. Section L: Real estate activities
- xi. Section M: Professional, scientific and technical activities
- xii. Section N: Administrative and support service activities
- xiii. Section P: Education
- xiv. Section Q: Human health and social work activities
- xv. Section R: Arts, entertainment and recreation and
- xvi. Section S: Other service activities.

Chapter 16 Compilation of other indicators for modes of supply

16.1. *Scope.* The compilation of statistics on value of services in transactions between residents and non-residents was covered in Chapter 14. That chapter covered also the allocation of such value data to modes of supply. Chapter 15 described compilation of FATS and the allocation of monetary and non-monetary FATS to mode 3. The purpose of this chapter is to focus on the compilation of data on the number of persons/trips relevant to modes 2 and 4. The Chapter contains three sections. Section A provides an overview of data variables on the movements of natural persons under modes 2 and 4 of services supply. Section B describes the uses of various data sources in the compilation of the variables listed in Section A. Section C provides additional advices on the organization of the data compilation process

A. Data on movements of natural persons under modes 2 and 4 of services supply: an overview

16.2 The supply of services involving movements of physical persons is defined in the GATS as follows: (i) movements of consumers (mode 2); and (ii) movements and temporary physical stay abroad of persons to supply services (mode 4). Therefore, the availability of data on the number of natural persons moving (flows) between countries to consume (mode 2) or to supply (mode 4) services and on foreign natural persons present at a certain point in time (stocks) is highly important for trade policy making as well as for the analysis of global supply of services. In the same way as there is interest in the value and volume of merchandise trade, additional needs also cover quantitative indicators, in particular when it comes to assessing commitments made in trade in services agreements (e.g. number of mode 4 persons, number of foreign affiliates established abroad in the context of mode 3 etc.).³³⁷ It is also of high importance for immigration policy making and monitoring.

16.3 Data on the movement of natural person should include detailed information on the characteristics and activities of such persons that could also be useful for estimating the value of services consumed or supplied by them in the cases when value data cannot be obtained from other sources. It should be noted that the information on the number of persons travelled during a given period of time is difficult to collect as many sources provide information on the number of the trips (or on fractions thereof)³³⁸. However, if data on trips are of a good quality then such data can be used to estimate the number of natural persons travelling under these two modes.

16.4 Taking into account the GATS needs, an indicative list of the variables covering movements (and stay) of natural persons under modes 2 and 4 is provided in paragraph 16.5. The corresponding explanatory notes can be found in paragraph 16.6 and the prioritization of the variables is discussed in paragraph 16.7. It is advised that countries consider this list and incorporate it in their SITS data compilation programmes taking into account their specific needs and circumstances.

16.5 The list of modes 2 and 4 variables is as follows:

³³⁷ See also MSITS 2010, chapter 5, section A.

³³⁸ The border surveys capture information about a particular traveller on a given trip. Since a person can make several trips during the same reference period the number of trips and the number of persons travelled are usually not the same.

i. Mode 2 variables:

Flows

Outbound flows:

- a. the number of natural persons of the compiling country who departed to other countries to consume services, broken down by:
 - Country of destination;
 - Purpose of stay abroad;
 - Types of products consumed;
 - Duration (length of stay).
- b. the number of trips of natural persons of the compiling country to other countries to consume services

Inbound flows:

- a. the number of natural persons of other countries who arrived in the compiling country to consume services, broken down by:
 - Country of origin;
 - Purpose of stay in compiling country;
 - Types of products consumed;
 - Duration (length of stay).
- b. the number of trips of natural persons of other countries to the compiling country to consume services

Stocks: Compilers will need to identify with users the relevant categories of trips/persons where stays will most probably be of a more durable nature, such as in the case of students.

Outward stocks of natural persons: the number of natural persons of the compiling country who were present in other countries at a certain point in time in the reference period (e.g. beginning, middle, or end of period) broken down by:

- a. Country of destination;
- b. Purpose of stay abroad;
- c. Types of products consumed;
- d. Duration (length of stay).

Inward stocks of natural persons: the number of natural persons of other countries who were present in the compiling country at a certain point in time in the reference period (e.g. beginning, middle, or end of period), broken down by:

- a. Country of origin;
- b. Purpose of stay in compiling country;
- c. Types of products consumed;
- d. Duration (length of stay).

ii. Mode 4 variables:

For mode 4, the compiler needs to distinguish between: two groups of natural persons: (i) those that will not be in an employer-employee relationship in the country in which they are temporarily present and (ii) those that will be in an employer-employee relationship in the country in which they are temporarily present (this refers solely to part of intra-corporate transferees and those directly recruited by foreign affiliates)

For the first category of natural persons the variables are as follows:

Flows:

Outbound flows:

- a. the number of natural persons of the compiling country who departed to other countries to supply services (or negotiate a contract or establishment of commercial presence),
- b. the number of trips of natural persons of the compiling country to other countries to supply services (or negotiate a contract or establishment of commercial presence), broken down by:
 - Purpose of (mode 4) stay abroad (with at least a separate identification of the four main categories of mode 4 movements);
 - Service category;
 - Country of destination;
 - Duration (length of stay);
 - Skills/occupation.

Inbound flows:

- a. the number of natural persons of other countries who departed to the compiling country to supply services (or negotiate a contract or establishment of commercial presence),
- b. the number of trips of natural persons of other countries to the compiling country to supply services (or negotiate a contract or establishment of commercial presence), broken down by:
 - (i.) Purpose of (mode 4) stay in the compiling country (with at least a separate identification of the four main categories of mode 4 movements);
 - (ii.) Service category supplied;
 - (iii.) Country of origin;
 - (iv.) Duration (length of stay);
 - (v.) Skills/occupation.

Stocks:

Outward stocks of natural persons: the number of natural persons of the compiling country who were present in other countries at a certain point in time in the reference period (e.g. beginning, middle, or end of period) to supply services (or negotiate a contract or establishment of commercial presence), broken down by:

- a. Purpose of (mode 4) stay abroad (with at least a separate identification of the four main categories of mode 4 movements);

- b. Service category;
- c. Country of destination;
- d. Duration (length of stay);
- e. Skills/occupation.

Inward stocks of natural persons: the number of natural persons of other countries who were present at a certain point in time in the reference period (e.g. beginning, middle, or end of period) in that country to provide services (or negotiate a contract or establishment of commercial presence), broken down by:

- a. Purpose of (mode 4) stay in the compiling country (with at least a separate identification of the four main categories of mode 4 movements);
- b. Service category;
- c. Country of origin;
- d. Duration (length of stay);
- e. Skills/occupation.

For the second category of natural persons (where the employer-employee relationship is in the country in which they are temporarily present), the variables to be collected are the same, except that the breakdown by purpose of stay should identify those relating to the movements between affiliated companies from those who refer to a direct recruitment by a foreign affiliate in the country of temporary stay. Therefore, the variables should be broken down by:

- a. Purpose of (mode 4) stay (abroad or in the compiling economy), i.e. corresponding to an intra-corporate transfer or to a direct recruitment by a foreign affiliate; Status of employment (employee of an affiliated company or recruited by a foreign affiliate in the country of temporary stay)
- b. Service category;
- c. Country of origin or destination;
- d. Duration (length of stay);
- e. Skills/occupation.

16.6 *Explanatory notes:*

- i. *Country of destination and origin.* The primary focus should be on the country of the supplier and that of the consumer of the service. In the case of mode 4 for receiving countries, priority should be given to identifying the country of origin of the supplier (which can differ from country of natural person in the case of contractual service suppliers-employees). When the source data does not enable this, the country of origin of the person could be used as a reasonably good indication of the country of origin of trade in services. Countries are encouraged to use the UN standard country codes and names. These codes and names are available at the UNSD website,³³⁹ which presents a list of the names of countries or areas in alphabetical order, their three-digit numerical codes used in the UN statistical databases and three-digit alphabetical codes assigned to countries by the International Organization for Standardization (ISO);

³³⁹ Available at: <http://unstats.un.org/unsd/methods/m49/m49.htm>

ii. *Purpose of stay abroad or in compiling country.* The identification of purposes of stay in an internationally comparable way facilitates the compilation of data needed for the trade purposes. It can also be of use for the estimation of missing value data in terms of EBOPS. Countries are advised as a starting point to make use of the classification of purposes of travel provided in IRTS 2008.³⁴⁰ This classification contains two main groups of purposes: (a) personal and (b) business and professional. The first group is broken down into 8 items, while the second is not subdivided. In view of the information needs related to mode 4 it is advised that countries subdivide this group as identified in MSITS2010: (a) contractual service suppliers, self-employed,³⁴¹ (b) contractual service suppliers, employees of a juridical person, (c) intra-corporate transferees where the employer-employee relationship remains with sending entity, (d) services sellers and persons responsible for setting up commercial presence. Such an integrated approach will strengthen the institutional arrangements in data collection and data compilation and will ensure a more efficient use of limited statistical resources. It should be taken into account that the mode 4 categories where the employer-employee relationship is in the country of destination (i.e. intra-corporate transferees and persons directly recruited by foreign affiliates) are not covered in the IRTS 2008 classification of purpose as this group is excluded from the tourism statistics framework. These will instead be covered by migration-type purposes. It is therefore recommend identifying within migrant work and employment based settlement, those who are related to intra-company transfers and those which refer to direct recruitments by foreign affiliates in the country of stay of the person.

iii. In view of the information needs related to both modes 2 and mode 4 it is therefore advised that countries build their breakdowns to respond to the information identified in this chapter and in a way which helps to compile data in terms of EBOPS and is also useful for tourism statistics. Such an integrated approach will strengthen the institutional arrangements in data collection and data compilation and will ensure a more efficient use of limited statistical resources.

iv. *Duration (length of stay).* The compilers should take into account the MSITS 2010 recommendation that notwithstanding the difficulties involved they should break down relevant statistics between permanent and non-permanent stays according to their national definition of residence, regardless of whether stays may be substantially longer than the one year generally suggested by statistical systems. In this connection it should be recalled that in tourism statistics the duration of trips is measured in terms of the number of overnight stays, and only will include those not exceeding one year. In the case of mode 4 where the employer-employee relationship stands in the country of temporary stay one should turn to migration statistics. Migration statistics only refer to short-term (3 months to 12 months) and long-term (more than 12 months) stay. In both frameworks there are no recommendations on groupings as identified in MSITS 2010. MSITS 2010 recommends,³⁴² as a long term goal, that the breakdown for mode 4 should be provided by: stays of less than three months, stays of between three months and less than one year, stays of between one and three years, stays of between three

³⁴⁰ See IRTS 2008, paragraphs 3.15 – 3.21 and paragraph 5.26 (5th bullet point).

³⁴¹ This category is to be compiled for mode 4 purposes if there is not an employer-employee relationship. See Box V.2 of the MSITS 2010.

³⁴² MSITS 2010, paragraph 5.26, 5th bullet.

and five years, and stays of more than five years. When it comes to the length of stay the information needs triggered by the GATS for the variable number of persons or for number of trips go beyond those used as guidelines in international statistical standards. Consequently compilers should adapt this classification to their national needs and statistical systems including the needs of national tourism statistics and migration statistics, as well as other types of statistics;

v. *Service category.* The detailed multipurpose international classification of services is provided in CPC, Ver.2 while more aggregated service categories adopted for use in statistics on service transactions between residents and non-residents are contained in EBOPS. In addition it is recommended that the breakdown of some FATS variables by service product should be made using a basis compatible with EBOPS 2010. Countries should select the services classification for use in the context of movements of natural persons under modes 2 and 4 depending on their needs and circumstances, but are advised to do so on a basis compatible with EBOPS 2010 to facilitate the analysis of this information as well as link if possible and relevant with the compilation of some balance of payments services items and FATS;

vi. *Skills (occupation).* This breakdown is entirely optional. However, it is advised that countries follow the International Standard Classification of Occupations (ISCO-08) if such data are compiled.

16.7 *Prioritizing the variables.* As indicated in paragraph 16.1 depending on the source used the compilation on data on trips is significantly less resource intensive and provides a satisfactory information basis for policy purposes and estimation of missing value data. Therefore, as a general rule, this Guide recommends that countries first concentrate on the compilation of data on inbound and outbound trips under both modes and use these data for the compilation of data on persons as necessary. In addition, it is advised that:

i. With respect to mode 2: the compilation of data on inbound and outbound flows should be given more priority than to the compilation of data on stocks;

ii. With respect to mode 4: (a) breaking down the flow data by purposes of stay, in particular the four categories of the mode 4 natural persons, country of origin (in priority that of the supplier which could differ from that of the person in the case of contractual service suppliers-employees; if not possible from data source country of person could give a reasonably good indication) and destination, by service category supplied should be given more priority than breaking down by skills and occupation and by duration (length of stay) and; (b) for the duration of stay, the definitions used to compile the statistics from which mode 4 information is sourced should be used, and any breakdown should be compatible these definitions, (c) compilation of data on skills/occupation is entirely optional as the GATS does not imply commitments in this respect; (d) the compilation of data on stocks should be given the same priority as the compilation of flow data in view of their great importance for the GATS mode 4 analysis.

B. Comparison of data sources

16.8. At present no existing source is capable to provide all desirable statistics on the number of persons moving under modes 2 and 4 regimes or on the number of their trips.

However, various potential sources exist and with some amendments can be used generate such statistics. In that context co-operation between relevant authorities is essential. It is important to note that collecting information specifically on the number of persons may not be feasible, but obtaining relevant information on the number of trips may be possible. It is also important to note that information on the number of persons (or trips) under modes 2 and 4 could be used to estimate the value of trade in services under these modes of supply. See Chapter 11 for more information on comparison of data sources for mode 2 and mode 4 movement persons.

16.9. *Concluding remarks on mode 4:*

- i. Given that the identification of the number of mode 4 persons in existing sources is a new area of work, the compiler's guide suggests to tackle this issue in stages, taking into account the various possibilities (and possible drawbacks) of each data source;
- ii. As a starting point it is proposed to derive provisional data that could give an approximation of the size of mode 4 in terms of the number of natural persons (directly collected if appropriate sources are identified or estimated based on the number of trips)
- iii. At the next stage the compilers should strive to obtain information for the mode 4 category of most interest to its economy (generally contractual service suppliers, whether employees or self-employed, or intra-corporate transferees), whether incoming or outgoing. This could be done by conducting an analysis of the potential size of the population based on the types of agreements signed by a country (e.g. free movement of persons, etc.), the estimated value of mode 4 trade, if certain visas that are issued are strongly related to trade in services, which services sectors are assumed to be a mode 4 comparative advantage of the economy (and reversely how big could mode 4 imports be) etc.;
- iv. It is a good practice to concentrate on obtaining annual statistics first, as this should be sufficient to serve most analytical and monitoring needs. If at a future stage compilers identify the need for more frequent statistics, this could be envisaged but maybe at a less detailed level.
- v. To enhance its usefulness of the compiled data should be produced, in the long run, with the minimum breakdown by industrial activity (according to ISIC, Rev.4) and occupation of individuals (ISO-2008);
- vi. The different circumstances in each country determine locally specific forms of trade in services through presence of natural persons. A methodological approach to the production of statistics on mode 4 persons should take into account, not only market specifics, but also national regulations of immigration and labour policies, as well as those of foreign investment and trade in services supply through presence of natural persons as well as effectiveness of regulations and policies. For instance, if foreign investment in service industry is strictly controlled then intra-corporate transferees could not be considered for estimation and if low skill labour cannot get work permits then estimation of mode 4 person number could be stressed on other occupations. Therefore, each economy should establish a necessary statistical capacity for compilation of mode 4 person numbers

depending on its circumstances, identifying simplifying features to determine key categories of data and major authorities to cooperate with, and compilation should be based on facts and in responding to recommendations of MSITS2010.

16.10. *Building stronger institutional arrangements as a precondition for success.* No single source can provide statistics on all these categories, and the direction of movements (e.g. incoming/outgoing) adds an additional difficulty for data producers. Thus, it will be necessary to combine statistics based on different sources and data collection methods. This is an additional argument for encouraging different institutions to work together. The development of clear guidance for the administrative forms and statistical questionnaires will be very important given that this subject is often difficult to understand. Note however, that the challenge is to make respondents understand the type of information that is requested, and that this does not necessarily mean that the statistical concepts need to be explained as the relevant statistics may be derived by the application of algorithms to information obtained from the responses to questions that are easy to understand for the respondents and concern information that they can easily recall or obtain from records readily available.

Chapter 17 Estimation and modelling of missing data, forecasting or back-casting

17.1. *Scope.* This Chapter describes the use of models and estimates to complement the observed SITS/FATS data which are frequently needed because part of the information cannot be collected or can be gathered only at an unsustainable cost; the available sources cannot provide the required coverage, detail, frequency and/or timeliness foreseen by the international standards; and the various sources to be combined in the collection system are partially overlapping. The Chapter consists of the following sections: Imputation for filling data gaps and for data editing purposes (Section A), Forecasting and compensating for lack of timeliness of data sources (Section B), Forecasting and compensating for lack of timeliness of data sources (Section C), Back-casting and revising time series (Section D) and Model based estimates (Section D).

A. Imputation for filling data gaps and for data editing purposes

17.2 Data gaps may arise in preliminary stages of compilation for various reasons, including non-responses from establishment surveys, lack of timely reporting, missing entries in secondary data sources, among others. Below are outlined the steps that compilers should follow to identify data gaps, missing replies, and suspect outliers and how to impute these values.

17.3 The steps to impute data gaps and missing replies, and to correct suspect outliers are:

i. *The first step is to check and load primary and secondary response data.* Namely, the data should be standardized to fixed formats in advance (produced in separate processes, done by ITSS team itself). When loading data, checks on codes, the completeness of necessary fields, and value ranges should be run automatically. For primary source data, or directly reported data, only incorrect records will not be loaded. For secondary data sources, or data that are not submitted directly by the reporter (including administrative sources), the complete file should be not be loaded and must be fully corrected before reloading is possible.

ii. *The second step in imputing data gaps and missing replies, etc. is the integration and processing of all data.* For non-responses from LE and SME (individual enterprises) and SPE's, imputations are done on the basis of the average of the last four quarters of responses. For LE, if there is no response for Q-1, Q-4 receives a higher weighted average. For SME, if there is no response for the last four quarters, there is no imputation. For Travel, imputation is based on Q-4 data. Other sources are imputed entirely on the basis of Q-1. To gross up (e.g., for SME data), each stratum is weighed, based on the number of enterprises in the population and the number of responding enterprises or imputed responses. Source data are at different level of detail in terms of services and/or countries involved in the international transaction. LE source contains the most detailed data; Travel is also detailed; and all other sources are less detailed. All these sources' data are 'converted' to the most detailed levels on basis of the corresponding LE data (mean of last 3 years). After ensuring all data are fully detailed, tabulation takes place by aggregating or summing up these components to more condensed groups of services or countries.

iii. *The third step in this process is checking the data, which involves data analysis.* In this analysis, significant increases and decreases of imports or exports as a share of net exports a particular service or with a particular country (or group of countries) are examined. The analysis is done step-by-step, using a top-down approach, meaning starting from total services trade with the world to more detailed levels of imports, exports, and net figures. The aim of macro-editing is to focus on suspicious values influencing publication totals. It also leads to gains in efficiency. Analysis is also done to trace a ‘suspicious’ enterprise or source that has to be edited and possibly adjusted.³⁴³ At Statistics Netherlands, this analysis is carried out with the use of Macroview, an interactive tool for top down analysis of ITS data. Major built analysis scans within Macroview include: (a) Quick scan (all services and aggregates, in graphical form); (b) External deliveries scan (selected services and underlying enterprises); (c) Complete scan (all services and aggregates and all country (groups), all sources, all underlying enterprises and weighing factors).

iv. *The fourth step is the editing of primary and secondary sources.* After having traced an enterprise or source with ‘suspicious’ data, the unit/source has to be assessed by the ITS editing team. This task is submitted to the ITS editing team with specific assignment information. If the assessment concerns a LE or SME enterprise, the enterprise will be contacted by phone or email. If needed, the data of the enterprise will be edited/adjusted and loaded again. If the assessment concerns another source, the source data provider will be contacted; if needed, a new source file will be made and loaded again.

17.4. Chapter 8 also shows the Japanese practice to compensate for the data not captured by the ITRS due to the threshold that is applied for data reporting.³⁴⁴

B. Forecasting and compensating for lack of timeliness of data sources

17.5. Data from some sources may not be available on a sufficiently timely basis for compilation of the balance of payments statement. Therefore, the compiler may extrapolate certain balance of payments series from earlier periods. Extrapolation also covers adjustments made to preliminary results from a collection source providing less than complete data. If the data source or data model used by the compiler provides data on a less frequent basis than the periodicity of balance of payments compilation, it will be necessary to interpolate data between measurement periods to obtain sufficiently frequent estimates for the balance of payments.³⁴⁵

17.6. Extrapolation techniques can range from the very simple to more complex procedures. The simplest techniques include using the same value as the previous period, or using the same change as occurred between the previous two periods and applying it to the previous period (either as a gross amount or as a percentage change). More complex techniques include drawing information from relevant data models and taking account of seasonality in sub-annual series. The choice of extrapolation method should be informed by

³⁴³ For example, at Statistics Netherlands, this analysis is carried out with the use of Macroview, an interactive tool for top down analysis of ITS data. Major built analysis scans within Macroview include: (a) Quick scan (all services and aggregates, in graphical form); (b) External deliveries scan (selected services and underlying enterprises); (c) Complete scan (all services and aggregates and all country (groups), all sources, all underlying enterprises and weighing factors).

³⁴⁴ See paragraphs 8.42 – 8.48 in chapter 8.

³⁴⁵ BPM6 Compilation Guide, paragraph 8.29.

the characteristics of the past series and the range of information available at the time of compilation.³⁴⁶

17.7. Similar techniques are used for interpolation, with the added information of having access to data for a period after the period of interpolation. Choices for interpolation include using a constant change between for periods between the start and end point or a constant percentage change. If other, more frequent, indicators provide evidence of seasonality in the series to be interpolated, then data models and interpolation techniques should take this into account.³⁴⁷

C. Back-casting and revising time series

17.8. Historical SITS are important for analysis. Compilers need to decide how far back in time they want to revise time series. Compilers are often challenged to provide long time series, in particular in the context of the implementation of new guidelines, or when a new data source, or compilation methodology is introduced. But they may in particular find it difficult to collect source data on the new basis for many years in the past.

17.9. For this suitable overlap periods and the stability of relationships over time needs to be analysed. This technique is useful for generating series for earlier periods when industry or product classifications change but source data classified on the new basis are not available for earlier periods. Back-casting could be very important for providing long time series for new trade in services (TIS) classifications based on EBOPS 2010. Compilers may consider using a constant change between periods between the start and end point or a constant percentage change. If other, more frequent, indicators provide evidence of seasonality in the series, then the back-casting techniques should take this into account. These relationships need to be analysed to see if they hold over time and therefore it can be decided what would constitute an acceptable back-cast time period.

17.10. A first step could be to use the EBOPS 2010 - EBOPS 2002 correspondence table.³⁴⁸ While some EBOPS 2010 items can be directly related to an item in EBOPS 2002, this is not always the case, in particular in cases where only main services aggregates are compiled. Some new EBOPS 2010 classifications cannot be directly related to those based on EBOPS 2002 (such as manufacturing services), some new recommended breakdowns could be derived from data for earlier periods based on relationships between old and new classifications in a recent overlap period.

C.1. Country experience: Australia

17.11. The Australian Bureau of Statistics (ABS) maintains long time series for national and international accounts. A large proportion of these series are maintained in original, seasonally adjusted and trend variations. The introduction of changes to compilation methods and treatments can result in shifts to the levels of component and total series. If the shift in level is sufficient to distort the seasonally adjusted time series, the ABS revises the historical series to make the time series as continuous as possible.

³⁴⁶ Ibid., paragraph 8.30.

³⁴⁷ Ibid., paragraph 8.31.

³⁴⁸ Available on the UNSD website.

17.12. In some cases there is not sufficient detail available to adjust the historical series directly. In these cases the ABS estimates the shift in level of the series by comparing estimates at one point in time for both the current and new basis (although comparison for additional periods is desirable).

17.13. Ideally any change in the level of a series would be measured over a sufficient time period to enable seasonal patterns to be observed. This is possible for some modelled estimates, but for estimates based on surveys, the cost of producing two estimates for one or more time periods is expensive both in processing costs and provider burden. In these cases, alternative methods may be needed.

17.14. To ensure consistent treatment of time series, the ABS has established a standard approach to measuring shifts in the level of series. The size of the level shift induced by a methodological or measurement change is assessed using regression analysis techniques on ratios between the current published estimates and actual or simulated estimates produced by the revised methodology. In cases where the level shift was found to be significant in the seasonally adjusted series, the historical series is back cast to make the time series as continuous as possible while maintaining, as far as possible, the integrity of the period to period seasonally adjusted movements, taking into account real world changes. For a small number of lower level series it may not be possible to create a valid time series and these series are marked 'not available' for periods prior to when data collection commenced.

17.15. Where it is not possible or necessary to maintain a long time series, an approach of 'bridging' the current published estimates and the estimates produced by the revised methodology is used. This means that estimates on both the current and new basis are produced for one point in time and both sets of estimates are released along with analysis to help users understand the differences between the series. This technique is particularly relevant for series where modelling beyond a certain time may not be appropriate.

17.16. The ABS produces a range of manuals describing the underlying concepts and structure of the key accounts. These manuals outline the sources, methods and terms used in compiling the accounts. The current versions of these publications reflect SNA1993 and BPM5 concepts. The concepts, sources and methods documentation was partially revised in early 2011 with further updates planned over the coming years.

D. Model based estimates

D.1. Developing model based estimates for estimating the number of persons moving under mode 4 regimes and the value of mode 4 trade, in particular using existing data from other frameworks (from migration/tourism statistics; household surveys; enterprise surveys, etc.)

17.17. For estimating the value of mode 4 as well on the number of persons moving under a mode 4 regime, model-based estimates could be developed, using existing trade in services data, travel information as well as existing data from tourism, migration, employment statistics etc. All this information could be used for building an estimation of mode 4. It is often argued that compiling modes of supply data may add costs to the data collection and compilation system, and model-based estimates are an un-costly way of using existing data. More information on combining different data source is provided in chapter 13.

17.18. For such an approach to be efficient it would of course be necessary for compilers to analyse existing metadata and familiarize themselves with the methodology behind data from other statistical frameworks. Also a close cooperation within the involved statistical domains and institutions as well the exchange of micro data is recommended. Probably, some adjustments to the data or data collection tools could be needed in particular to have the relevant breakdowns available, in particular to clearly distinguish within the group of persons that are employed, those that will have an employer-employee relationship in their country of origin (mode 4) and those that will have this relationship in the host economy.³⁴⁹

17.19. For example, tourism data sources could be used for collecting further information on the characteristics of mode 4. Subsequently an estimation of the number of mode 4 persons and of the value of mode 4 trade could be derived by "grossing-up" the figures by using a model. Of course the compiler would need to conduct some research work in that direction and some adjustments on different concepts and terminology in both statistical domains would certainly be necessary.

17.20. Although the above paragraph has mainly focused on the use of tourism and migration statistics, a similar approach could be adopted for other types of sources such as labour force surveys, household surveys or even business surveys. Once again the issue would be to clearly identify in data sources mode 4 persons. This could be done by adding similar types of options in the questions asked to respondents. So far, the results from different labour force surveys could be a starting point for future linkage of data.

Box 17.1

Experience of the Netherlands in use of ARIMA X12 for some services

Some data for other services are produced by model estimation. For example, travel statistics are based on specific sources, namely the Continuous Holiday Survey for outbound travel and the Survey on Accommodation and price indices for inbound travel. Financial services are estimated by combining information of Monetary Financial Institutions, Top enterprises, and X12 ARIMA. Insurance services are estimated with X12 ARIMA and input from national accounts. Government services are estimated with X12 ARIMA. The CIF FOB correction is made for freight transport and freight insurance services on the basis of FTS contract information.

Beginning in 2014, with the start of BPM6, estimations by X12 ARIMA will be discontinued. Data for the services involved will be compiled partially by direct and indirect data collection in the LE/SME process. Part will also be done in co-operation with the Central Bank (and national accounts), such as the export of insurance services, where the export data of insurance companies are collected by the Central Bank and the national account data compilers are responsible for deriving insurance services from data on insurance premiums.

D.2. Country experience: Austria - a model to estimate monthly BOP data

17.21. In Austria, the Oesterreichische Nationalbank (OeNB) is responsible for compiling and disseminating Balance of Payments and Trade in Services data. In cooperation with Statistics Austria the OeNB collects data on Trade in Services on a survey basis, which is conducted quarterly. In contrast to financial transactions the OeNB did not find it feasible to employ monthly surveys on real economic transactions due to cost-benefit considerations as data are not available on a monthly basis for most of respondents. Accordingly and due to the lack of user needs for monthly data, national figures on Trade in Services are published as

³⁴⁹ Actually, defining services contracts versus employment relationships is something that would better serve the compilation of tourism statistics as well as migration statistics.

quarterly time series only. At the same time the OeNB has to fulfil monthly reporting requirements according to EU regulation.³⁵⁰ To meet these ends the OeNB has introduced a monthly estimation model to derive monthly Balance of Payments data from quarterly reports.

17.22. The model produces total figures – credits and debits - for goods, services, compensation of employees and current transfers. Besides global figures a regional breakdown is available for Intra- and Extra-EU-trade as well as trade with Intra- and Extra-Euro area. When assessing the model described below it has to be kept in mind that the results are not intended to be published as such. Instead they inter into EU- and Euro area aggregates.

17.23. In principle, reports have to be sent to the ECB and EUROSTAT around the 10th day of the second following month of the reporting period. Therefore estimation is based on quarterly time series which are updated according to revision standards as well as exogenous variables if available. After quarterly figures have become available monthly data are reconciled with the quarterly results.

17.24. For calculating monthly figures the original quarterly time series is at first seasonally adjusted by calculating the smoothing component, the seasonal component and the irregular components. Three different methods of smoothing are employed (moving average, basic exponential smoothing and exponential smoothing according to HOLT). After the original time series has thus been prepared three different estimation models are employed (linear regression, quadratic regression and cubical regression). Either a period of 12, 18 or 24 months is used for forecasting. Therefore 27 different modelling techniques are in principle available. For each item monthly results are estimated for 24 test periods according to the different models and the quality of the results is quantified by comparing them with the actual figures by calculating relative absolute and relative quadratic differences.

17.25. For services exports an estimation model employing exponential smoothing according to HOLT and quadratic regression over a period of 12 months has proven to be most suitable.³⁵¹ The regression also incorporates overnight stays of foreign guests in Austria as an independent variable. Still, in-coming travel makes up for approximately one third of Austria's services exports. Therefore the development of overnight stays is an influencing variable of the development of overall services exports.

³⁵⁰ Regulation (EU) No. 555/2012 amending Regulation (EC) No. 184/2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment; ECB's Guideline of 9 December 2011 on the statistical reporting requirements of the European Central Bank in the field of external statistics (ECB/2011/23).

³⁵¹ Exponential smoothing according to HOLT:

$$\begin{aligned}
 g_t^H &= \beta \cdot (g_{t-1}^H + b_{t-1}) + (1 - \beta) \cdot y_t && \text{for } t = 2, 3, \dots, T \\
 &&& 0 < \alpha < 1 \\
 b_t &= \alpha \cdot b_{t-1} + (1 - \alpha) \cdot (g_t^H - g_{t-1}^H) && 0 < \beta < 1 \\
 &&& \text{Initial value } g_1^H = x_1 \\
 &&& b_1 = 0
 \end{aligned}$$

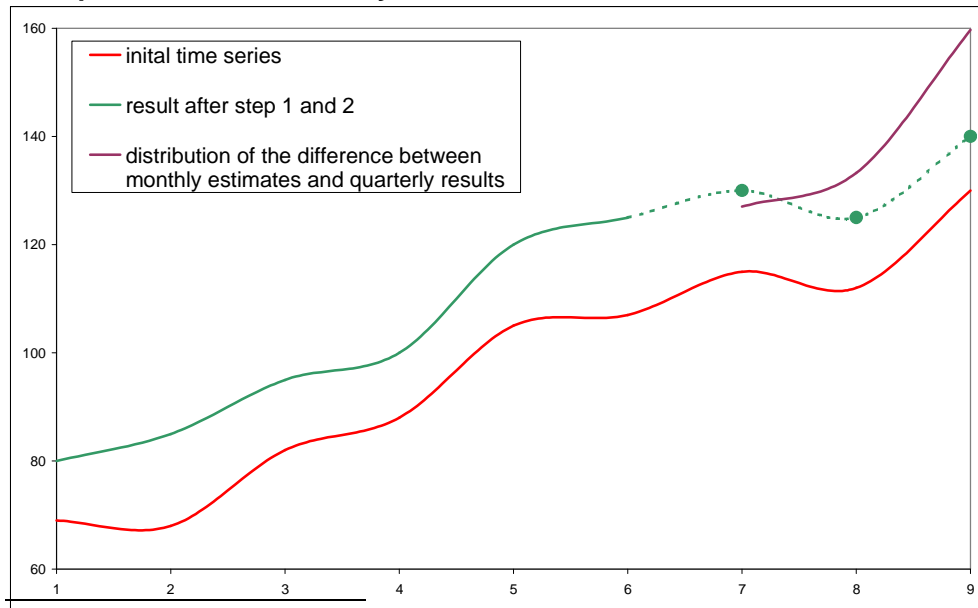
17.26. For services imports a model with basic exponential smoothing and linear regression over a period of 18 months has proven to be most effective.³⁵²

17.27. After global values are estimated, they have to be divided into Intra-EU-, Extra-EU-, Intra-Euro area and Extra-Euro area exports and imports. For Trade in Services the method of averaging the last two identical quarters has been chosen. This means that for estimating the current month the regional division according to the respective quarter in the last and second last year is considered. In contrast to linear regression this method is employed for those items for which strong seasonal fluctuations are observed, which is the case for Trade in services.

17.28. When quarterly results become available monthly estimates are reconciled so that the three months equal the corresponding quarter. The adjustment is based on so called Cubic Splines. At first monthly data are seasonally adjusted and smoothed. Also the actual quarterly results are adjusted for smoothing components. Then a multiple regression model with Cubic Spline function is applied based on which the monthly results are estimated again.³⁵³ As a third step the difference between the actual quarterly result and the quarterly result based on the Spline function has to be determined and distributed between the monthly estimates. This is again accomplished by applying the regression coefficients of the Spline function. As a last step the monthly estimates have to be adjusted for the seasonal and smoothing components which have been determined at the beginning.

Figure 17.1

Example of Austria's monthly estimates distribution



³⁵² Basic exponential smoothing:

$$g_t^e = \beta \cdot g_{t-1}^e + (1 - \beta) \cdot y_t \quad \text{for } t = 2, 3, \dots, T$$

$$0 < \beta < 1$$

$$\text{Initial value } g_1^e = x_1$$

³⁵³ $Y_{\text{pred}} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$

predictors X_1, X_2, X_3 capture cubic timing (t, t^2, t^3)
 predictor X_4 (Spline)

D.3. Country experience: India: estimation of non-response in the survey on exports of Information Technology and Information Technology Enabled Services

17.29. In the annual survey of exports of ‘Information Technology and Information Technology Enabled Services’ conducted in India by the Reserve Bank, non-responses occur from a number of small as well as medium size companies. The exports figures of the non-responding units are estimated using a well-defined methodology described below:

- i. Using the observed proportions of ‘nil’ and ‘closed’ units, first the number of companies ‘reporting no export of software products’, i.e., ‘nil exports’ and ‘closed’ out of the non-responding companies are estimated. These are then removed from the universe of non-reporting companies to obtain the number of operating non-reporting companies.
- ii. Since no information is available on the business activities of the non-reporting companies, these are classified into four groups namely, IT services, Software product development, BPO Services and Engineering services based on the observed proportions corresponding to these four categories derived from the responding units.
- iii. As most of the small companies do not have onsite operations and an overwhelming number of nonresponding units are small companies, only offsite software exports of these companies are estimated. For this purpose the offsite exports reported by the respondent companies are used.
- iv. The distributions of offsite exports of the responding companies for the above mentioned four groups are observed to be highly positively skewed and hence, instead of mean, the median of the distributions are used for estimating software exports for each group. The estimated software exports for i^{th} group of nonrespondent companies are computed using the formula:

$$\text{Median (export) of } i^{\text{th}} \text{ group} \times \left[\frac{\text{no. of reported companies in } i^{\text{th}} \text{ group}}{\text{total no. of reported companies}} \right] \\ \times \text{no. of nonresponding operating companies.}$$

- v. The total software exports of India is then derived adding the reported software exports of responding companies and the estimated software export for nonrespondent companies in each of the four groups.

D.4. Country experience: UK - experience on outward FATS modelling

17.30. *Introduction.* Since reference year 2009, there has been an obligation by the UK to provide Eurostat data on the majority shareholdings outside the EU held by UK Ultimate Controlling Institutions (UCIs). This regulation requires the UK to produce Outward Foreign Affiliate Statistics (OFATS) on an annual basis reporting on the economic activity, turnover, number of persons employed and country of residence of subsidiaries where a UK UCI has a majority shareholding. In order to achieve this, the UK adopted a model based approach using data from survey returns in conjunction with auxiliary information from the Euro Groups Register (EGR) and the National Business Register.

17.31. The UK OFATS survey collects data from 200 enterprise groups where the UCI is resident in the UK. Data items include employment, turnover and the number of foreign affiliates. These variables are consolidated by country and industry for each parent company. By matching this returned information with corresponding company data held on the EGR and national business register, a model is developed. This is then applied to the remainder of the un-sampled population.

17.32. The process involves estimating affiliate employment (logistic regression, multilevel model) and calibration:

i. *Logistic regression.* An initial logistic regression is used due to the prevalence of zero returns which affects the fit of the model. Sample returns are re-coded to a binary variable to indicate if the employment is zero or non-zero. This model then calculates the probability that the survey response is non-zero.

ii. *Multilevel model.* Having developed a model to estimate if a record is non-zero, a multilevel model is then used to estimate a value for the employment of an affiliate. The explanatory variables that are used in our model have a hierarchical relationship and this model attempts to account for that. For both models, the coefficients are estimated using the sample returns and are then used to predict the estimates when applied to the un-sampled population.

iii. *Calibration.* The final stage involves calibrating estimates to employment of global groups outside of the UK. Information on global employment is available from the EGR, whilst information on the groups UK employment is available from the national business register. Model estimates are then calibrated to the calculated employment outside of the UK.

17.33. The estimates produced for UK OFATS are currently branded as experimental statistics by ONS, as they are new official statistics undergoing evaluation.

Part IV Cross-cutting issues

Scope. Part IV covers a number of cross-cutting topics which are relevant to all stages of the SITS production process as well as to all SITS components. The sequencing of the chapters in Part IV is based on the recognition of the compilation of metadata as an integral part of the statistical process and on the appreciation of the critical importance of quality management for production of statistics which meets the user needs. Dissemination of data and metadata, and their evaluation in the context of their adequacy to user needs, are seen as the concluding stages of statistical process. Based on the above, metadata are discussed first (Chapter 18), followed by the elaboration of the quality management issues (Chapter 19) and data and metadata dissemination (Chapter 20). Application of modern ICT at all stages of the SITS production and dissemination is also treated as a cross-cutting topic and is covered separately in the last chapter (Chapter 21).

The recommendations of the UN Statistical Commission on the above topics and contained in *Guidelines on Integrated Economic Statistics*³⁵⁴ and in *National quality assurance framework*³⁵⁵ guided the discussion of the concepts, definitions and good practices covered in this part of the Guide. In this connection it should be emphasized that those recommendations were developed on the basis of country experiences and the guidance provided by the UNECE and various international, supranational and regional organizations (e.g., IMF, OECD and Eurostat). Also, this Part is making an extensive use of the concepts and definitions developed by an international consortium in the context of Statistical Data and Metadata Exchange (SDMX) project³⁵⁶. The Commission recognized SDMX as the preferred standard for the exchange and sharing of data and metadata and encouraged its further implementation by national and international statistical organizations.³⁵⁷

Chapter 18 Metadata

18.1. *Scope.* This chapter describes concept and structure of SITS metadata as well as good metadata compilation practices. It underscores that that metadata are relevant for the correct understanding of the content, coverage and limitations of the data, and should guide users on their correct interpretation. The Chapter consists of the following sections: Metadata: an overview of the basic concepts and definitions (Section A), Compilation of SITS metadata: indicative lists of metadata items and an overview of good practices (Section B), Metadata standards of international and regional organizations (Section C) and Country practices (Section D).

³⁵⁴ Available at: <http://unstats.un.org/unsd/nationalaccount/ies/GuidelinesIES.pdf>.

³⁵⁵ Available at: <http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx>.

³⁵⁶ Definitions of many metadata related concepts referred to in this chapter can be found in SDMX content-oriented guidelines, Annex 4: Metadata common vocabulary, available at: http://sdmx.org/wp-content/uploads/2009/01/04_sdmx_cog_annex_4_mcv_2009.pdf.

³⁵⁷ See the UN Statistical Commission's Report on the thirty-ninth session (26 to 29 February 2008), page 15, available at: <http://unstats.un.org/unsd/statcom/doc08/Report-English.pdf>.

A. Metadata: an overview of basic concepts and definitions

18.2. *Definition of metadata.* Metadata are data that defines and describes other data and processes.³⁵⁸ This means that metadata are data that describe other data, and data become metadata when they are used in this way. This happens under particular circumstances and for particular purposes, as no data are always metadata. The set of circumstances and purposes (or perspective) for which some data are used as metadata is called the context. Therefore, metadata are data about data in some context.³⁵⁹

18.3. *Scope of statistical metadata.* Statistical metadata, according to the UN Statistical Commission, describe various elements of the statistical processes including collection, processing and production of statistical data and indicate the data sources and tools that are instrumental in statistical production like statistical standards and classifications, business registers and frames, statistical methods, procedures and software. The Commission recommends the use of standard terminology for metadata across the various statistical domains as this will facilitate the international comparison of data.³⁶⁰

18.4. Metadata encompass administrative facts about the data (who has created them and when), definition of concepts applied, as well as description of how data were collected and processed. For example, a significant amount of qualitative information assembled during the various processing stages (e.g., on various adjustments, corrections and imputations) should be considered metadata information and be systematized, stored and made available to all the compilers who are using such intermediate datasets.³⁶¹

18.5. *The metadata covers* the following items³⁶²: statistical description, unit of reference, reference period, institutional mandate, confidentiality, release policy, frequency of dissemination, dissemination format, accessibility of documentation, quality management, relevance, data accuracy and reliability, timeliness, comparability, coherence, cost and response burden, data revision and statistical processing.

18.6. *Role of metadata in the statistical production process.* Metadata play a crucial role in statistical production process as they enable and facilitate sharing, querying, understanding and using statistical data over the different stages of collection, compilation and dissemination, and at their various levels of aggregation (i.e., from microdata to macrodata) thus ensuring that common standards and definitions are followed to the extent possible throughout all related statistical domains. It is especially important when several different organizations are involved in the statistical production process. Metadata help to assess the quality of data and to understand the rationale for the decisions taken at various stages of processing.

18.7. Metadata have a central role in the data production infrastructure that will greatly enhance the efficiency of the statistical system. From the very beginning of the statistical process the metadata support collection as well as post-collection processing and support activities in the various collection stages.

³⁵⁸ See ISO/IEC FDIS 11179-1 "Information technology - Metadata registries - Part1: Framework", March 2004.

³⁵⁹ See SDMX CONTENT-ORIENTED GUIDELINES, Annex4 (2009) for details.

³⁶⁰ Guidelines on Integrated Economic Statistics (UN), page 40.

³⁶¹ See Guidelines on IES, paragraph 3.46.

³⁶² Guidelines on IES, paragraph 5.91.

18.8. In this connection the UN Statistical Commission increasingly encourages countries to treat metadata compilation and, subsequently, their dissemination as an integral part of the statistical process in any statistical domain and promotes the standardization of the compilation and dissemination of metadata³⁶³.

18.9. *Role of metadata in serving user needs.* Metadata are not only important for the statistical production process but its availability and wide dissemination constitute a precondition of the correct interpretation of publicly available statistics and their effective use (See Chapter 20 for details).

18.10. *Countries metadata systems* might consists of such components as the classification database, the concepts database, the archiving database and their user interfaces. In well-organized systems the metadata items can be conveniently retrieved from the relevant databases and be used in the generation of the intermediate of final datasets or in production of other metadata. However, frequently metadata systems are not well designed and such retrieval and use of metadata is not efficient. Also, updating and synchronization of the metadata in not well connected databases is difficult. Frequently metadata are stored in different formats specific to particular sets of statistics, in Access, SAS, Word and Excel files, which makes them available only to the statistics concerned or even only to a certain expert. Deficient and non-uniform descriptions of metadata restrict their retrievability and usability.

18.11. *The way forward: metadata warehousing.* The important way of making the metadata more efficient is the use of a data warehousing system of data and metadata contributes to the integration of economic statistics. With well-designed data warehouses, the dissemination of data and metadata becomes integrated with the collection and processing components of the statistical production process. To support the integration of economic statistics, an output data warehouse should establish a simple and efficient process for accessing data to provide:

- i. comprehensive metadata to facilitate understanding and analysis;
- ii. consistent and coherent long-term time series;
- iii. reliable information about the availability of data;
- iv. information about the availability of updated versions of published series;
- v. contact details for the people who can provide more information about a statistical output.

18.12. Statistical agencies have traditionally developed a separate database for each statistical output. While this simplifies development processes, this practice can be a hindrance to integration of statistics, especially if there is no effort to standardize variable definitions, labels and formats. As better IT tools have become available, any statistical agencies are moving towards the development and population of output data warehouses. The data warehouse approach to the storage of statistical data has many advantages, including:

³⁶³ The important role in this respect was played by UNECE publication "Terminology on Statistical Metadata", Conference of European Statisticians Statistical Standards and Studies, No. 53, Geneva, 2000.

- i. Efficient search capability;
- ii. Consistency in terminology and definition of variables;
- iii. Standardized statistical methodologies;
- iv. Easier access with common tools and processes;
- v. Increased coherence through standard classifications and definitions;
- vi. Relevant metadata available in a standard consistent format;
- vii. Easier data integration

18.13. The implementation of a more comprehensive metadata system is an important prerequisite in developing an integrated questionnaire in the statistical system. The metadata will eventually provide the necessary coherence between the various estimates and data collection tools leading to the production of the statistical information. For ultimate users, metadata are not only about concepts related to units, variables and classifications, metadata are also about quality.

A.1. The role of SDMX

18.14. Statistical Data and Metadata Exchange (SDMX) project is developed by an international consortium³⁶⁴ for use in data and metadata management. The SDMX information model is applicable for much of the information stored and processed within statistical organizations and its use by such organizations is promoted by the UN Guidelines on integrated economic statistics.³⁶⁵

18.15. The use of the standardized information management model is very important for SITS compilers as various agencies participate in the data collection and compilation at different stages of the statistical production process and the establishment of a standardized data sharing between them results in additional efficiency gains.

³⁶⁴ The BIS, ECB, EUROSTAT, IMF, OECD, UN, and the World Bank. See SDMX website for details at: <http://sdmx.org/>.

³⁶⁵ Guidelines, paragraph 5.123.

Box 18.1

Statistical Data and Metadata Exchange (SDMX)

1. *SDMX*. Statistical Data and Metadata Exchange (SDMX) is an international co-operation initiative aimed at developing standards and the employment of more efficient processes for the exchange and sharing of statistical data and metadata among international organisations and their member countries. The initiative commenced in 2001 and is sponsored by seven international organisations: Bank for International Settlements (BIS), European Central Bank (ECB), Eurostat, International Monetary Fund (IMF), OECD, United Nations (UN) and the World Bank.
2. The rationale of SDMX is standardisation for statistical data and metadata access and exchange. With the ever increasing ease of use of the Internet, the electronic exchange and sharing of data is becoming easier, more frequent and important. This heightens the need for the development of a set of common standards for exchange and sharing of statistical data and metadata, and for making processes more efficient. As statistical data exchange takes place continuously, the gains to be realized from adopting common standards are considerable both for data providers and users.
3. The objective is to establish a set of commonly recognised standards, adhered to by all players, making it possible not only to have easy access to statistical data, wherever these data may be, but also access to metadata that makes the statistics more meaningful and usable. The standards are envisaged to help national organisations to fulfill their responsibilities towards users and partners, including international organisations, more efficiently. Among other things they are seen as facilitating use of Internet-accessible databases in order to be able to retrieve data as soon as they are released. Several quality dimensions can also be improved through the use of SDMX standards, such as timeliness, accessibility, interpretability, coherence, as well as cost-efficiency.

18.16. *Main components of metadata*. Metadata consists of (a) structural metadata and (b) reference metadata. *Structural metadata* refers to identifiers and descriptors of data such as concepts and attributes of variables which are essential for discovering, organizing, retrieving and processing statistical datasets. They can be thought of as the ‘labels’ that need to be associated to each data item in order for it to have a meaning at all. *Reference metadata* are of a more general nature and may refer to specific statistical data, to entire data collections or even to the institution that provides the data. Both structural and reference metadata can be further detailed by specific sub-categories depending on the information needs and specificity of a given statistical domain.

18.17. *Metadata and data quality*. There is a bidirectional relationship between metadata and data quality. On the one hand, metadata provide details on the various quality dimensions of international trade in services statistics. On the other hand, the availability of adequate metadata to users is in itself a quality indicator (accessibility) of the statistics. Compilers should aim to provide users with all the metadata required to understand both the strengths and the limitations of the statistics they produce, documenting in a timely manner all methodological aspects underlying the data which are relevant for their proper use and interpretation (e.g., definitions, classifications, scope, confidentiality issues, sources, estimation models *etc.*).

18.18. *Institutional arrangements for metadata compilation*. To reduce the burden associated with SITS metadata projects, it is a good practice for compilers to closely cooperate with the specific units responsible for ensuring within the national statistical system that metadata is produced, that it adheres to a standard format, and that it is properly maintained and updated.

B. Compilation of SITS metadata: indicative lists of metadata items and an overview of good practices

18.19. This section contains the indicative lists of structural and reference metadata items which countries are encouraged to compile as part of the production of their international trade in services statistics. The issues related to the dissemination of metadata are discussed in Chapter 20. The indicative lists of the metadata items provided below are based on the recommendations contained in MSITS and on the metadata reporting requirements of several international organizations (see Section C).

B.1. Structural metadata

18.20. The structural metadata has a number of common items relevant for all SITS as well as items which are specific to statistics on resident/non-resident transactions in services, FATS and non-monetary indicators on modes of services delivery.

18.21. The following are typical structural metadata items relevant for each international trade in services statistics dataset:

Common items

- i. Reporting country: Code and name of the compiling country
- ii. Reference period: Identification of the specific month, quarter, year, etc.
- iii. Unit of measurement:

Items specific to statistics on resident/non-resident transactions in services

- i. Trade flow: Whether the data refers to credits (exports), imports (debits), balance (net).
- ii. Value of trade:
- iii. Product classification: Name of the classification used to report the data (e.g., EBOPS, CPC)
- iv. Trading partner: Identification of the partner country or region
- v. Currency: Identification of the currency unit (e.g., national currency, US dollars, etc.) in which trade values are expressed e.g. E if EMU MS (in millions of currency units);

Items specific to FATS statistics

- i. FATS characteristics: e.g. number of enterprises, number of persons employed, etc;
- ii. Resident economic activity vs. non-resident economic activity;
- iii. Confidentiality of the values;

Items specific to non-monetary indicators on modes of services supply

- i. Direction of trips: Inbound, outbound;
- ii. Country of origin or destination;

B.2. Reference metadata

18.22. The following items are typically part of the reference metadata associated with international trade in services and FATS statistics:

- i. *Legal framework and institutional arrangements* (e.g., references to relevant laws and regulations, role of all institutions involved in compilation, etc.) and dissemination of statistics and coordination and data sharing among these institutions, etc.), either distinctly or as part of broader statistics (e.g., balance of payments and other external sectors statistics);
- ii. *Underlying concepts and definitions* ((e.g., definition of residency, non-residency residency of units engaged in international trade in services, as applicable, definition of statistical value, scope of international trade in services statistics and their relationship to national accounts and international trade in goods statistics, distinction from other international transactions; classification under relevant services item according to BPM6/EBOPS and any deviations from international standards, if any; UCI concept, definition of a foreign affiliate, direct or indirect control, statistical and reporting units, etc.);
- iii. *Description of core data sources* (e.g., ITRS, surveys, administrative-based records, statistical models, partner country data, or combination of sources); include specific notes on services categories for which particular data-collection arrangements or combination of sources are employed; include comments on limitations of source data in terms of coverage, frequency, level of detail, reliability, availability, etc.;
- iv. *Description of data collection, data compilation methods and data-processing procedures*; include frequency of data collection, description of specific procedures used for data collection, validation, editing, aggregation, etc ; include any adjustments made to source data, such as imputations, misclassification, adjustments for non-response or under-coverage; include any adjustments from data processing, such as coding, tabulation errors, etc; indicate any departures from international standards, if any;
- v. *Estimation methods* (e.g., estimation of trade below customs and statistical thresholds e.g. CIF-FOB adjustments for transportation item, etc.);
- vi. *Dissemination policy* including release and revision schedules; indicate the presentational format of data, level of disaggregation, eventual commentaries accompanying the data, etc.;
- vii. *Additional explanations and footnotes concerning the data as required* (e.g., explanatory notes on revisions, breaks in series, application of confidentiality rules, treatment of special categories of goods, etc.);
- viii. *Quality reporting*;
- ix. *Confidentiality*

18.23. *SITS metadata compilation.* Metadata are compiled at all stages of the statistics production process. This guide recommends that the following good practices are used, as applicable, in metadata compilation:

i. *Use of standardized metadata concepts.* In the same way as any data item metadata items as well have to be clearly defined. Even though, each statistical domain, including SITS, has its specific metadata items, it is a good practice, to use applicable standardized concepts that are relevant across statistical domains (e.g., by adopting cross-domain concepts from the SDMX framework or OECD Glossary of Statistical Terms). The aim should be to promote harmonization of statistical information and their related high-level metadata across various institutions and statistical domains, even if some specific metadata concepts are not applicable or are organized differently in different domains or institutions;

ii. *While developing SITS metadata make use of the metadata developed in the related statistical domains and used in your country.* SITS is a relatively new statistical domain in many countries. It is very likely that the metadata policy is already in place in related statistical domains. The SITC compilers are advised that such metadata is carefully reviewed and made use of;

iii. *Define layers of metadata.* It is a good practice to compile metadata in layers of incremental detail and provide clear links between high-level and specific metadata concepts. Such layered structure of metadata will allow data compilers to access necessary metadata items and to minimize the risk of misinterpretation of data content while, for example, compiling data from various data sources as well as to ensure clear presentation of metadata to diverse groups of users.

iv. *Establish metadata registries.* A metadata registry is a central repository (usually a database itself) with information that allows linking the detailed definitions (semantics) and the codes (representations) of the metadata items used to describe a particular statistical dataset. It is a good practice that SITS compilers put special emphasis on the development, maintenance and dissemination of metadata registries in order to improve the harmonization, standardization, use, re-use and interchange of their metadata³⁶⁶.

v. *Confidentiality and access to metadata during the compilation process.* As SITS metadata might be compiled by various units of the same agency or by units located in different organizations there might be cases when metadata describes individual data, so that confidentiality might apply. It is a good practice, in this contest, that confidentiality rules are set up in such a way that they will allow compilers to obtain non-confidential data aggregates with the same metadata content;

vi. *Incorporate structural metadata items into the data processing as early as possible (e.g., as parts of the records structure).* This will facilitate data processing including the identification of viable options for data aggregation and subsequent presentation. It is advisable that structural metadata are made an integral part of the database on the international trade in services and FATS statistics in a way that it can

³⁶⁶ The Euro SDMX Registry includes harmonized structural metadata, the DSDs designed for the statistical domains, metadata structure definitions; e.g., ESMS and other related information.

be extracted together with any data item and used in data processing to obtain meaningful combined data sets.

vii. *Establish clear links between data and metadata.* As metadata are generated and processed during every step of the data compilation process, there is a strong requirement to ensure that the appropriate metadata retain their links with data. In this connection it is a good practice to implement metadata-driven management along the various stages of the statistical production process³⁶⁷.

viii. *Compilation of reference metadata.* Reference metadata can be presented as a detailed explanatory note describing the scope, coverage, and quality of a dataset and can be made available electronically alongside the database or in special publications.

18.24. *Priorities in metadata management.* Although ideally the correct management of metadata would require to take care of all the aspects highlighted so far, countries with less developed systems for trade in services and FATS statistics should begin by setting up an exhaustive, consistent and detailed repository (possibly in the form of a *metadata registry*) with both structural and reference metadata, as far as possible adopting cross-domain, nationally and internationally standardized metadata concepts. The next immediate priority should be granting an easy, extensive and timely access to metadata to the general public. In subsequent phases the system could be improved by gradually incorporating more advanced features, e.g. implementing a layered presentation of metadata, actively linking data and metadata, etc.

C. Metadata standards of international and regional organizations

18.25. International availability of appropriate metadata is of great interest to all the organizations having global or regional responsibilities. In these organizations undertook effort to standardize their requirements to scope and structure of the metadata which they would like to obtain from countries. Those requirements should be carefully studied by countries both to improve their metadata collection and compilation as well as to ensure better compliance with their international and regional data and metadata reporting obligations.

C.1. The Balance of Payments Data Structure Definition (DSD)

18.26. The BOP-DSD Technical Group (TG) has defined the list of concepts that are necessary to codify the reporting requirements of four international agencies³⁶⁸ for data collection exercises of external sector statistics, compiled based on the methodology defined in the IMF *Balance of Payments and International Investment Position Manual, sixth edition* (BPM6), the *Manual on Statistics of International Trade in services*, and the *OECD Benchmark definition of foreign direct investment- 4rth edition*. The extended Balance of Payments Services classification is presented in the BOP DSD, including the complementary groupings. The different items of the EBOPS classifications are listed in the “international account item” dimension of the DSD.

³⁶⁷ There are several information model specifications that can contribute to achieve this goal (most notably SDMX and DDI), which are designed to perform different functions but can be used together in the same system, or complement each other in the compilation and exchange of data and metadata.

³⁶⁸ The four agencies are the European Central Bank, Eurostat, IMF, and the OECD.

18.27. The Balance of Payments Data Structure Definition (BOP-DSD) includes 16 concepts and 13 attributes (see box 18.2 for a list of concepts and attributes in the BOP DSD). Concepts are used to uniquely identify a time series and, when joined together, they provide the series code or “time series keys” which is the unique identifier for a time series. When defining a time series key using SDMX, a valid code must be assigned to each concept of the DSD. Attributes are used to further describe the data.

18.28. To what regards the coding of detailed annual trade in services statistics, a number of concepts of the DSD are fixed, this would for instance be the case of the reference and counterpart area which are the total economy (S1) in all cases where the trading parties are unrelated. Trade in services between related parties series can also be coded in the BOP DSD by using the code S1A “affiliates” in the counterpart sector dimension. In order to eliminate the possibility of having multiple ways of coding the EBOPS 2010 complementary grouping “total services transactions between related entities”, this item is not coded in the international accounts dimension of the DSD but it is coded in the Annual International Trade in Services dataflow as follows (example on the credit side): A.N.#.%S1.S1A.T.C.S._Z._Z._Z.\$._T._X.N.

18.29. When coding detailed trade in services by partner country, other concepts of the DSD are not fixed this would for instance the case of the “counterpart area” which is used to identify the territory of the non-resident entity of individual time series. The country code list in the counterpart area follows the ISO classification and is a "cross-domain" code list, according to the recommendation of the SDMX Initiative. The codes used for various regional groupings were harmonized across international agencies that use the BOP-DSD, wherever possible.

18.30. The times series key [A.N.US.FR.S1.S1.T.C.SC._Z._Z._Z.USD._T._X.N] provides an example of codification for a trade in services series. This times series key stands for a series in annual Frequency “A”; with no adjustment indicator “N”; the Reference country is the United States “US”, the counterpart area is France “FR”; the reference sector is the total economy “S1”; the counterpart sector is the total economy “S1”; the Flows and stocks indicator dimension indicates a Transaction “T”; the accounting entry dimension indicates that we are looking at a credit entry “C”; the international accounts item specifies that the series relate to transport services “SC”; the functional category is not applicable “Z”; The Instrument and assets classification is not applicable “Z”; the maturity is not applicable “Z”; The Unit of measure is US dollar “USD”; the currency of denomination is set to “All currencies of denomination” _T; the Valuation is unspecified _X; the compilation methodology is National “N”.

18.31. As noted above, attributes are only used to qualify observations further, e.g., they provide information on the “confidentiality” status or the “compiling organisation”. Attributes do not contribute to the identification of a time series as this is already done by using the dimensions.

Box 18.2 List of concepts and attributes in the BOP DSD	
The second column provides information on the coding that should be used in the context of an annual trade in service data submission:	
1. Frequency	The code for the annual periodicity is 'A'.
2. Adjustment indicator	The code for no adjustment is "N"
3. Reference country or area	For a reference country, a ISO 3166 code should be used
4. Counterpart Area	For the partner country, a ISO 3166 code should be used
5. Reference sector	The code for total economy which is used for ITS in all cases is "S1"
6. Counterpart sector	Total economy code "S1" except for the complementary grouping Total services transactions between related enterprises code "S1A" <i>ref para. 18.27.</i>
7. Flows and stocks indicators	The code for Transactions which is used in all cases for TIS is "T"
8. Accounting entries	Credit "C", Debit "D" or Net "N"
9. International accounts item	"S" for total services, "SC" for transportation, etc.
10. Functional category	Identifies functional categories applicable of financial accounts. It is not applicable for trade in services code: "Z"
11. Instrument and assets classification	Identifies the type of financial instrument which is reported in the external sector time series. It is not applicable for trade in services code: "_Z"
12. Maturity	Identifies the types of maturity of the financial instrument of the external sector statistics time series: It is not applicable for trade in services code: "_Z"
13. Unit of measure	Refers to a currency unit.
14. Currency of denomination	Identifies the currency of denomination of the financial instrument. A constant "_T" is applied.
15. Valuation	Identifies the method of valuation for selected transactions and positions data. For ITS, this is coded "unspecified "_X".
16. Compilation methodology	Distinguishes between time series which are compiled according to the methodology applied for national statistics by opposition to similar time series which follow the specific methodology applied for economic or currency union statistics. For ITS, this is coded as national "N".
The BOP-DSD also uses the following 13 attributes: I. Time format II. Observation status III. Confidentiality Status IV. Pre-break value V. Comments to the observation value VI. Detailed description (title complement) VII. Short title VIII. Unit multiplier IX. Decimals X. Time period collection XI. Reference period detail XII. Compiling organisation XIII. Underlying compilation	

C.2. SDDS/GDDS metadata of the IMF

18.32. The Special Data Dissemination Standard (SDDS) and General Data Dissemination System (GDDS) are part of the IMF's data standards initiative aiming at enhancing member countries' data transparency and to promoting their development of sound statistical systems. A dedicated electronic bulletin board on the IMF website³⁶⁹ posts information that SDDS countries provide to the IMF on their dissemination practices and offers direct links to the economic and financial data that countries disseminate under the SDDS and information that GDDS countries make available to the IMF on their statistical practices

18.33. For both standards, metadata are organized by country and by topic. The SDDS metadata are available in two presentations, the current SDDS format and the DQAF format, while the GDDS uses the DQAF presentational format. Revisions to metadata are deemed to be made regularly and these are available on the website. Metadata aspects related to international trade in services are embedded in the various quality dimensions of the balance of payments framework.

C.3. The SDMX content-oriented guidelines on metadata by Eurostat

18.34. Based on the SDMX information, model data structure definitions (DSDs) can be created for international trade in services.³⁷⁰ The SDMX content-oriented guidelines have been used to define reference metadata for the European Statistical System.³⁷¹ Table 18.1 lists main components of the ESS reference metadata. This Guide advises SITS compilers of other regions to take the EU recommendations into account, as applicable, while setting up the conceptual structure of their own SITS reference metadata.

C.4. Consistency of data collected/disseminated by international organisations

18.35. Compilers should make every possible effort of allocate the collected services across available EBOPS items and ensure consistent data are provided to all international organisations.

18.36. Throughout the data collection and compilation process compilers should as much as possible avoid using existing or catch-all services categories (e.g. "other business services", "other business services n.i.e.", services not allocated, undefined) or catch-all partner categories (e.g. not allocated, undefined) to assign services transactions for which a classification in one EBOPS 2010/partner category or another may not be precisely identified. Indeed, if compilers follow the practice of assigning unidentified services transactions to EBOPS categories such as "other business services n.i.e." (or one of its parent if this level of disaggregation is not available, e.g. "other business services") which scope is defined in MSITS 2010 (par. 3.252) and the EBOPS2010-CPC2 correspondence table, this will artificially inflate, and sometimes in very large proportions, services data for this specific EBOPS category as well as for its parent categories ("technical, trade-related and other business services" and "other business services"). This practice will also increase bilateral

³⁶⁹ <http://dsbb.imf.org>.

³⁷⁰ Available at:

http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/metadata/metadata_structure

³⁷¹ See also the Commission Recommendation 2009/498/EC of 23 June 2009 on reference metadata for the European Statistical System (OJ L 168,30.6.2009, page 50).

Table 18.1

Main components of the European Statistical System reference metadata

	Concept Name	Descriptions
1	Contact	Individual or organisational contact points for the data or metadata, including information on how to reach the contact points.
2	Metadata update	The date on which the metadata element was inserted or modified in the database.
3	Statistical presentation	Data description, classifications used, concepts and definitions etc.
4	Unit of measure	The unit in which the data values are measured.
5	Reference period	The period of time or point in time to which the measured observation is intended to refer.
6	Institutional mandate	Set of rules or other formal set of instructions assigning responsibility as well as the authority to an organisation for the collection, processing, and dissemination of statistics.
7	Confidentiality	A property of data indicating the extent to which their unauthorised disclosure could be prejudicial or harmful to the interest of the source or other relevant parties.
8	Release policy	Rules for disseminating statistical data to interested parties.
9	Frequency of dissemination	The time interval at which the statistics are disseminated over a given time period.
10	Dissemination format	Media by which statistical data and metadata are disseminated.
11	Accessibility of documentation	
12	Quality management	Systems and frameworks in place within an organisation to manage the quality of statistical products and processes; quality assurance and quality assessment.
13	Relevance	The degree to which statistical information meet current and potential needs of the users.
14	Accuracy and reliability	Accuracy: closeness of computations or estimates to the exact or true values that the statistics were intended to measure. Reliability: closeness of the initial estimated value to the subsequent estimated value.
15	Timeliness and punctuality	
16	Comparability	Measurement of the impact of differences in applied statistical concepts, measurement tools and procedures where statistics are compared between geographical areas or over time.
17	Coherence	Adequacy of statistics to be reliably combined in different ways and for various uses.
18	Cost and burden	Cost associated with the collection and production of a statistical product and burden on respondents.
19	Data revision	Any change in a value of a statistic released to the public.
20	Statistical processing	Source data, frequency of data collection, data validation, data compilation and adjustments.
21	Comment	Supplementary descriptive text which can be attached to data or metadata.

asymmetries, because unidentified services will be classified in different ways by different reporting countries and reduce the analytical usefulness and reliability of these data.

18.37. Consequently, compilers should strive to systematically allocate all services transactions to relevant individual EBOPS 2010 services categories as well as appropriate partners. To the extent possible this should be done at the most detailed level. If diverse transactions are bundled into a single payment or receipt, the compiler should to the extent possible estimate the relevant shares of services transactions in the best possible way and allocate estimations to items/partners as relevant. To conduct such allocations compilers could use information from partner economies. If it is not feasible or not reliable to establish such a procedure then it is recommended to use the most appropriate modelling and statistical techniques, based on the information available to compilers. Such practices should be clearly documented in the metadata to improve the understanding of users with respect to the quality of the data they analyse.

18.38. It is reiterated that compiler's should make every effort to allocate all services transactions to individual EBOPS 2010 services categories, however, if there is no other possibility, compilers should use a category to be labelled "not allocated", which will be shown at the same level as the main services items (i.e. not included in any of the services items) or main partners.³⁷² The corresponding values should only be included at the total services level if such a category corresponds to the classification by type of service as illustrated in table 18.2, or at the total World level if it relates to the partner breakdown.

18.39. As noted above, a "services not allocated" item is included in the BOP DSD because it is part of the quarterly Balance of Payments (QBOP) requirement by ECB and Eurostat and of the annual international trade in services³⁷³ (ITSS) data reporting requirements by Eurostat, OECD and UNSD whereas such a category is not included in the QBOP data reporting requirement of the IMF.

18.40. Compilers should report consistently to all international organisations by ensuring the total services and main items are transmitted with identical values to all international organisations even if a "not allocated" category is used in a compiling country. Consequently in their report to IMF, for countries which use a category "services not allocated" the individual services items will not add up to the total services.

18.41. In the case some services transactions are not allocated, the compiler should indicate in the metadata provided to the agencies that collect trade in services at the level of BPM6 requirements that total services does not correspond to the sum of main services items due to the presence of some transactions that are impossible to allocate across services.

³⁷² It is important to note that the role of EBOPS 2010 items labelled as "other" or "not included elsewhere (n.i.e.)" is not to include transactions for which the compiler cannot determine to which EBOPS item they belong to, but rather corresponds to a residual list of services which are not identified as belonging to specific EBOPS items. In other words these "other" or "n.i.e." items are actually defined, and correspond to a specific list of CPC Version 2 products (see EBOPS 2010-CPC Version 2 correspondence table available at <http://unstats.un.org/unsd/tradeserv/TFSITS/msits2010/ebops2cpc.htm>).

³⁷³ By detailed partner countries for the former and detailed EBOPS 2010 for the latter.

Table 18.2

Reporting trade in services to IOs depending if the category “services not allocated” is part of the data collection or not

<i>Credit side</i>	<i>Submission of data to agencies collecting trade in services following EBOPS 2010</i>	<i>Submission of data to agencies collecting trade in services at the level of BPM6 requirements</i>
Total Services	130	130
Manufacturing services on physical inputs owned by others	10	10
Maintenance and repair services n.i.e.	10	10
Transport	10	10
Travel	10	10
Construction	10	10
Insurance and pension services	10	10
Financial services	10	10
Charges for the use of intellectual property n.i.e	10	10
Telecommunications, computer, and information services	10	10
Other business services	10	10
Personal, cultural, and recreational services	10	10
Government goods and services n.i.e.	10	10
Services not allocated	10	(Metadata need to explain the difference between total services and sum of subcomponents)

18.42. Compilers should also pay attention to set up rules to allocate the correct geographical partner if payments are recorded under services not allocated. Shares of geographical distribution to World could be considered as a method. It should be noted that the allocation by nature of transaction and by partner country are independent. It happens that transactions can not be allocated by services but can be allocated by partner.

18.43. The Eurostat BoP Vademecum (2012 edition), defines services not allocated as follows: "This item was created due to the fact that some Member States are unable to allocate certain amounts to specific services. This results in a discrepancy between the sum of individual services and the total services item. If a Member State encounters this problem, they should record such residual item under item “SN” which corresponds to the code for

‘Services not allocated’.³⁷⁴ Only services whose origin cannot be determined should be included under this label.

D. Country experiences

18.44. This section provides examples of countries’ strategies in development of their metadata systems. For example, the Bank of Italy case highlights the importance of an integrated approach to metadata across various related statistical domains and the critical role of metadata in establishing an efficient statistical production process.

D.1. Country experience: Italy

18.45. This section describes the experience of the Bank of Italy (BoI) in the management of metadata within the framework of its general statistical function. The choice to not treat the topic specifically in relation to trade in services statistics is dictated by the fact that the BoI adopts an *integrated approach* to tackle the broad range of its statistical competences. In fact, as it is typical to many central banks in the world, the BoI statistical responsibilities encompass, in addition to balance of payments, statistics on money and banking, financial accounts, payment system and many other responsibilities.

18.46. The BoI’s wide statistical production implies the need to face a complex and rapidly evolving scenario, which in turn calls for a comprehensive and flexible statistical and IT approach. In this context, the integrated approach, which constantly inspired the evolution of the BoI statistical system, allowed to improve the consistency and the overall quality of the statistics produced and to reduce costs.

18.47. According to the integrated approach, the BoI’s statistical responsibilities, even if related to heterogeneous domains and user categories, are generally managed as parts of a *unique* system, under the control of a unique internal statistical *community*. This implies relevant pros. In particular, the evolution of statistics is agreed in a harmonized and consistent way among the various classes of users that can consequently share the information collected and produced without duplications, respecting confidentiality constraints.

18.48. In essence, BoI’s approach is based on two pillars: (1) an *information model*, capable to fully *describe* the data, the processing steps and the elaboration algorithms, and (2) a *software platform*, supporting the *entire statistical production chain*, as much as possible according to industrial-like automated processes.

18.49. Since a long time, the BoI has been working on the definition of a rigorous and general *information model* able to describe all the characteristics of statistical data and processes. The underlying assumption is that a “good” information system has to be complete and self-consistent, i.e. contains not only the statistical information in its strict sense but also the ‘meta-information’ (or metadata) that describes the meaning and the structure of the data, to the benefit of all categories of users, both internal and external to the producer’s organization. Consistently, the ideal information model has to provide an integrated vision of the statistical data and the relationships among them (e.g. logical dependencies and processing rules).

³⁷⁴ In the new BOP DSD as designed by the BOP DSD technical Group in the course of 2012-2013.

18.50. In the Eighties, as most of the available standards and commercial models lacked many of the desired features, the BoI started the design of a proprietary model, called “Matrix”, developed over many years. The Matrix model³⁷⁵ was derived from mathematical and statistical theory and it was designed to support all phases of statistics production process (data definition, collection, compilation and dissemination) and all the data of interest (micro/aggregated, registers, questionnaires, etc.).

18.51. A fundamental infrastructural component of BoI’s system, representing a core part of the actual implementation of the Matrix model, is the central *statistical dictionary*, a logically unique repository describing the whole content of the statistical data warehouse, in term of *structural metadata* (e.g. concepts, classifications, data structures, processing rules) and *reference metadata* (e.g. methodological notes).

18.52. The Matrix model has been designed taking also into account major international standards, in order to develop a cooperative and integrated attitude towards other institutions and the international statistical community. The outcome is, for example, that Matrix data and metadata can be easily transformed into SDMX and XBRL data and metadata (as well as into other formats).

18.53. An essential feature of the Matrix model is that it enables to set up a *metadata-driven* system. This characteristic is particularly apparent with the introduction of the recently introduced *software platform* for statistical processing (INFOSTAT).³⁷⁶ Consistent with the underlying holistic approach, INFOSTAT supports the statistical production chain end-to-end, by providing the following services:

- i. Identity and access management (e.g. user registration, authentication, user profiling)
- ii. Metadata definition
- iii. On-line data-entry and data upload
- iv. Support for a secure data transmission, storing and versioning
- v. Validations and handling of reporters’ feedbacks
- vi. Calculations
- vii. Data and metadata import, export and exchange
- viii. Event subscription and notification
- ix. User environment for metadata prototyping and data production
- x. Reporting and publishing

³⁷⁵ Vincenzo Del Vecchio, Fabio Di Giovanni, Stefano Pambianco, *The Matrix Model – Unified model for statistical data representation and processing*, Banca d’Italia, 2007. (http://www.bancaditalia.it/statistiche/quadro_norma_metodo/modell_SIS/matrixmod.pdf).

³⁷⁶ Fabio Di Giovanni, Daniele Piazza, *Processing and managing statistical data: a National Central Bank experience*, paper presented at the “International Statistical Conference” held in Prague on 14-15 September 2009 (http://www.czso.cz/conference2009/proceedings/data/process/piazza_paper.pdf).

- xi. Search of information
- xii. Inquiry and download of data and metadata
- xiii. End-to-end monitoring of business processes

18.54. By exploiting both the potentialities of the information model and those originating from the latest ICT advancements, INFOSAT uses metadata in an “active” way, taking advantage of the fact that they provide most of the information (e.g. data structures, transformation rules, etc.) needed to comprehensively “guide” data processing.

18.55. An important plus of this approach is that most of the changes in the statistical processes (for example, the set up of a new survey, the production of new sets of statistics, the issue of a new publication, etc.) can be timely implemented by metadata administrators, avoiding the need for software maintenance. In fact, also thanks to an advanced user interface, metadata administration is rather user-friendly, allowing non-IT users to accomplish it directly, without the intervention of technical staff.

18.56. The system can handle both qualitative and quantitative indicators, micro and macro data, questionnaires, registers and unstructured data (documents), so allowing a wide integration; data are uniformly represented as dimensional “cubes”, possibly multi-measure, according to the Matrix model.

18.57. INFOSAT also adopts the Matrix model language, called EXL (expression language), to define expressions used in data validation and, in general, in data processing phases for calculations. It includes a large set of operators and the rules for combining operators. EXL expressions are quite similar to spreadsheet formulas, which help to define them intuitively, and the language is conceived to be extensible, in order to support the great variety and variability of statistical requirements.

Chapter 19 Quality management and quality reporting

19.1. *Scope.* This chapter provides an overview of basic concepts and definitions used in quality management (Section A), is focused on quality assurance frameworks (Section B), quality measurement and reporting (Section C) and country practices in reconciliation studies, cross-country comparability and bilateral data exchanges (Section D). The quality management issues pertinent to managing statistical system and institutional environment were covered in Chapters 1-3. Dissemination of information on quality management and statistical output is dealt with in Chapter 20.

A. Quality management: an overview of basic concepts and definitions

19.2. Managing quality of official statistics is vitally important to compilers' success in maintaining the trust and confidence of their users and data reporters. High and clearly reported quality standards will also aid users in better understanding and appropriately analyzing the statistics and ultimately raise the visibility and reputation of the compiling agency.

19.3. The development of the Template for a Generic National Quality Assurance Framework (NQAF) and the Guidelines to accompany the Template was undertaken by the Expert Group on NQAF in response to a request by the United Nations Statistical Commission at its forty-first session in 2010.³⁷⁷ The NQAF Template is intended to be used as a tool to provide the general structure within which countries that choose to do so can formulate and operationalise national quality frameworks of their own or further enhance existing ones. Several key indicators of quality as cited in the NQAF template are covered in depth below.

19.4. *Concept of quality.* While there are several general definitions of quality, one of the most commonly used and succinct definitions is fitness for use or fitness for purpose. The ISO 9000 Quality Management System's definition, cited in both the SDMX Metadata Common Vocabulary and in the NQAF Glossary, quality is the degree to which a set of inherent characteristics fulfills requirements. Over the past twenty years or so, statistical agencies have arrived at a consensus that the concept of quality of statistical information is multi-dimensional and that there is no one single measure of data quality. Several statistical organisations have developed lists of quality dimensions, which, for international organisations, are being harmonised under the leadership of the Committee for the Coordination of Statistical Activities (CCSA).³⁷⁸

19.5. *Quality dimensions.* NQAF lists the following examples of common quality dimensions or components: relevance; accuracy; reliability; timeliness; punctuality; accessibility; clarity, interpretability; coherence; comparability; credibility; integrity; methodological soundness; and serviceability. The dimensions of quality are overlapping and interrelated and, therefore, the adequate management of each of them is essential if information is to be fit for use. SDMX defines eleven quality dimensions: relevance,

³⁷⁷ For more information, see: <https://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx>.

³⁷⁸ Description of the CCSA activities in this respect is available at: <http://unstats.un.org/unsd/accsub-public/data-quality.htm>.

accuracy, timeliness, punctuality, accessibility, clarity / interpretability, comparability, coherence, integrity, credibility, and methodological soundness³⁷⁹.

19.6. This subsection provides definitions of the quality dimensions. To ensure conformity of the use and interpretation of the meaning of quality dimensions by SITS compilers, all definitions are taken from the NQAF Glossary, which was endorsed by the UN Statistical Commission as part of the NQAF Guidelines.³⁸⁰

19.7. *Relevance*. Definition: The degree to which statistics meet current and potential users' needs. Context: Relevance is concerned with whether the available information sheds light on the issues that are important to users. Assessing relevance is subjective and depends upon the varying needs of users. The Agency's challenge is to weight and balance the conflicting needs of current and potential users to produce statistics that satisfy the most important needs within given resource constraints. In assessing relevance, one approach is to gauge relevance directly, by polling users about the data. Indirect evidence of relevance may be found by ascertaining where there are processes in place to determine the uses of data and the views of their users or to use the data in-house for research and other analysis. Relevance refers to the processes for monitoring the relevance and practical usefulness of existing statistics in meeting users' needs and how these processes impact the development of statistical programmes.

19.8. This concept can be broken down into: "Relevance - completeness"; "Relevance - user needs"; "Relevance - user satisfaction". "Completeness" refers to the extent to which all statistics that are needed are available. The measurement of the availability of the necessary statistics normally refers to data sets and compares the required data set to the available one. "User Needs" refers to the description of users and their respective needs with respect to the statistical data. The main users (e.g. official authorities, the public or others) and user needs should be stated, e.g. official authorities with the needs for policy indicators, national users, etc. "User Satisfaction" refers to the measure to determine user satisfaction. This concerns how well the disseminated statistics meet the expressed user needs. If user satisfaction surveys have been conducted, the domain manager should mention them. Otherwise, any other indication or measure to determine user satisfaction might be used.

19.9. *Accuracy*. Definition: Closeness of computations or estimates to the exact or true values that the statistics were intended to measure. Context: The accuracy of statistical information is the degree to which the information correctly describes the phenomena. It is usually characterized in terms of error in statistical estimates and is often decomposed into bias (systematic error) and variance (random error) components. Accuracy can contain either measures of accuracy (numerical results of the methods for assessing the accuracy of data) or qualitative assessment indicators. It may also be described in terms of the major sources of error that potentially cause inaccuracy (e.g., coverage, sampling, non-response, response error). Accuracy is associated with the "reliability" of the data, which is defined as the closeness of the initial estimated value to the subsequent estimated value. This concept can be broken down into: Accuracy - overall (summary assessment); Accuracy – nonsampling error; Accuracy - sampling error.

³⁷⁹ See SDMX, Metadata common vocabulary, page 109; available at: http://sdmx.org/wp-content/uploads/2009/01/04_sdmx_cog_annex_4_mcv_2009.pdf.

³⁸⁰ Definitions and their contexts are taken from NQAF Glossary (2012), Available at: <http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx>.

19.10. *Timeliness*. Definition: Length of time between data availability and the event or phenomenon they describe. Context: Timeliness refers to the speed of data availability, whether for dissemination or for further processing, and it is measured with respect to the time lag between the end of the reference period and the release of data. Timeliness is a crucial element of data quality: adequate timeliness corresponds to a situation where policy-makers can take informed decisions in time for achieving the targeted results. In quality assessment, timeliness is often associated with punctuality, which refers to the time lag between the release date of data and the target date announced in some official release calendar. It is typically involved in a trade-off against accuracy. The timeliness of information will influence its relevance.

19.11. Timeliness can be further broken down into "Timeliness - output" and "Timeliness - source data". "Timeliness - output" refers to the lapse of time between the end of a reference period (or a reference date) and the release of a version of the data: provisional, preliminary, or final results. This reflects many factors, including some that are related to institutional arrangements, such as the preparation of accompanying commentary and printing. Usually, data are not released immediately at the end of the period they refer to, since data collection, data processing and data dissemination work needs to be performed. "Timeliness - source data" refers to the time between the end of a reference period (or a reference date) and actual receipt of the data by the compiling agency. Compared to the parent concept -timeliness - this concept only covers the time period between the end of the reference period and the receipt of the data by the data compiling agency. This time period is determined by factors such as delays accommodating the institutional arrangements for data transmission.

19.12. *Punctuality*. Definition: Time lag between the actual delivery of the data and the target date when it should have been delivered. Context: This concept is linked to that of "timeliness" (see below). A statistical release can be punctual, i.e. released on the scheduled release date, but still be untimely if the release date is so far away from the reference period as to degrade their value of decision-making.

19.13. *Accessibility* Definition: The ease and conditions under which statistical information can be obtained. Context: Accessibility refers to the availability of statistical information to the user. It includes the ease with which the existence of information can be ascertained, as well as the suitability of the form or medium through which the information can be accessed. The cost of the information may also be an aspect of accessibility for some users. Accessibility refers to the physical conditions in which users can obtain data: where to go, how to order, delivery time, clear pricing policy, convenient marketing conditions (copyright, etc.), availability of micro or macro data, various formats (paper, files, CD-ROM, Internet), etc.

19.14. *Clarity/interpretability*. Definition: The extent to which easily comprehensible metadata are available, where these metadata are necessary to give a full understanding of statistical data. Context: Clarity is sometimes referred to as "interpretability". It refers to the data information environment: whether data are accompanied by appropriate metadata, including information on their quality, and the extent to which additional assistance is provided to users by data providers. In the European Statistics Code of Practice, clarity is strictly associated to accessibility to form one single quality criteria: "accessibility and clarity".

19.15. *Comparability*. Definition: The extent to which differences between statistics can be attributed to differences between the true values of the statistical characteristics. Context:

Comparability aims at measuring the impact of differences in applied statistical concepts and definitions on the comparison of statistics between geographical areas, non-geographical dimensions, or over time. Comparability of statistics, i.e. their usefulness in drawing comparisons and contrast among different populations, is a complex concept, difficult to assess in precise or absolute terms. In general terms, it means that statistics for different populations can be legitimately aggregated, compared and interpreted in relation to each other or against some common standard. Metadata must convey such information that will help any interested party in evaluating comparability of the data, which is the result of a multitude of factors.

19.16. In some quality frameworks, for instance in the European Statistical Code of Practice, comparability is strictly associated with the coherence of statistics. The concept can be further broken down into: (a) Comparability - geographical, referring to the degree of comparability between statistics measuring the same phenomenon for different geographical areas; (b) Comparability over time, referring to the degree of comparability between two or more instances of data on the same phenomenon measured at different points in time; (c) Comparability between domains, referring to the comparability between different survey results which target similar characteristics in different statistical domains.

19.17. *Coherence*. Definition: Adequacy of statistics to be combined in different ways and for various uses. Context: When originating from different sources, and in particular from statistical surveys using different methodology, statistics are often not completely identical, but show differences in results due to different approaches, classifications and methodological standards. There are several areas where the assessment of coherence is regularly conducted: between provisional and final statistics, between annual and short-term statistics, between statistics from the same socio-economic domain, and between survey statistics and national accounts. The concept of coherence is closely related to the concept of comparability between statistical domains. Both coherence and comparability refer to a data set with respect to another. The difference between the two is that comparability refers to comparisons between statistics based on usually unrelated statistical populations and coherence refers to comparisons between statistics for the same or largely similar populations.

19.18. Coherence can be generally broken down into “Coherence - cross domain” and ‘Coherence – internal’. Users should be aware that, in the Data Quality Assessment Framework of the International Monetary Fund, the term “consistency” is used for indicating “logical and numerical coherence”. In that framework, “internal consistency” and “intersectoral and cross-domain consistency” can be mapped to “internal coherence” and “cross-domain coherence,” respectively.

19.19. *Integrity*. Definition: Values and related practices that maintain confidence in the eyes of users in the agency producing statistics and ultimately in the statistical product. Context: Under the SDDS framework, “integrity” is the third of four dimensions of the standard (i.e., data, access, integrity, and quality) for which evidence of a subscribing member's observance of the standard can be obtained. Integrity refers to the description of the policy on the availability of the terms and conditions under which statistics are collected, processed, and disseminated. It also describes the policy of providing advanced notice of major changes in methodology, source data, and statistical techniques; the policy on internal governmental access to statistics prior to their release; the policy on statistical products' identification. One important aspect, in integrity, is the trust in the objectivity of statistics. It implies that

professionalism should guide policies and practices and it is supported by ethical standards and by transparency of policies and practices

19.20. *Credibility*. Definition: Confidence that users place in statistical products based simply on their image of the data producer, the statistical authority i.e., the brand image. Context: Credibility depends upon the extent to which data are perceived to be produced professionally in accordance with appropriate statistical standards with transparent policies and practices. Where lacking, doubts may arise in the minds of the users about the quality of the statistics being produced by the authority.

19.21. *Methodological soundness*. Definition: The extent to which the methodology used to compile statistics complies with the relevant international standards, including the professional standards enshrined in the Fundamental Principles for Official Statistics. Context: A critical pre-requisite for the production of high quality statistics.

19.22. *Quality management and its components*. Quality management is defined in SDMX as systems and frameworks in place within an organisation to manage the quality of statistical products and processes. Quality management refers to the application of a formalised system that documents the structure, responsibilities and procedures put in place for satisfying users, while continuing to improve the data production and dissemination process. It also includes how well the resources meet the requirement. This concept can be broken down into: "Quality management – quality assurance"; "Quality management - assessment"; "Quality management documentation".

- i. *Quality assurance* refers to all the planned and systematic activities implemented that can be demonstrated to provide confidence that the processes will fulfill the requirements for the statistical output. This includes the design of programmes for quality management, the description of planning process, scheduling of work, frequency of plan updates, and other organisational arrangements to support and maintain planning function.
- ii. *Quality assessment* contains the overall assessment of data quality, based on standard quality criteria. This may include the result of a scoring or grading process for quality. Scoring may be quantitative or qualitative.
- iii. *Quality documentation* contains documentation on methods and standards for assessing data quality, based on standard quality criteria.

B. Focusing on quality assurance

19.23. *International guidelines on national quality assurance*. Quality assurance is at the core of quality management and various experiences at national and international levels were accumulated over the recent years. The need for promotion of good practices and harmonization of work in this area lead to the decision by the United Nations Statistical Commission (2010) to develop a template for a generic national quality assurance framework, with accompanying guidelines, to assist countries that may wish to formulate and operationalise national quality frameworks of their own, or further enhance existing ones. Template for a Generic National Quality Assurance Framework (NQAF) and Guidelines for the Template for a Generic National Quality Assurance Framework, have been prepared and

are available at the UNSD website.³⁸¹ At its forty-third session in 2012, the Statistical Commission fully endorsed the generic national quality assurance framework template and encouraged countries to use it.

19.24. It should be understood that the application or implementation of the NQAF Template is intended to be voluntary. The Template is not meant to be prescriptive or viewed as a recommended replacement for other quality frameworks already adopted or in use by a country's national statistical office. NQAF makes use of the existing quality frameworks (e.g., the International Monetary Fund's Data Quality Assessment Framework (DQAF) and the European Statistics Code of Practice (CoP)). The mapping of the NQAF Template to each of the above-mentioned frameworks, which was done by the expert group, provides assistance to national statistical offices in harmonizing their quality assurance frameworks with those of regional or international organizations.

19.25. The quality assurance encompasses numerous activities and NQAF provides guidance on their broad categories³⁸² (see box 19.1). The NQAF guidelines provide the description on each activity, list elements to be assured at the national statistical system level and identify supporting mechanisms including related good practices. This guidance should be taken into account by the SITS compilers while developing their own national quality assurance frameworks. In particular, it is a good practice to define concrete activities on: (a) managing statistical system, (b) managing institutional environment, (c) managing statistical process and (d) managing statistical output.

³⁸¹ Available at: <http://unstats.un.org/unsd/dnss/QualityNQAF/nqaf.aspx>.

³⁸² See NQAF, page 5.

Box 19.1

Template for a generic national quality assurance framework (NQAF)

1. Quality context

- 1a. Circumstances and key issues driving the need for quality management
- 1b. Benefits and challenges
- 1c. Relationship to other statistical agency policies, strategies and frameworks and evolution over time

2. Quality concepts and frameworks

- 2a. Concepts and terminology
- 2b. Mapping to existing frameworks

3. Quality assurance guidelines

- 3a. Managing the statistical system
 - [NQAF 1] Coordinating the national statistical system
 - [NQAF 2] Managing relationships with data users and data providers
 - [NQAF 3] Managing statistical standards
- 3b. Managing the institutional environment
 - [NQAF 4] Assuring professional independence
 - [NQAF 5] Assuring impartiality and objectivity
 - [NQAF 6] Assuring transparency
 - [NQAF 7] Assuring statistical confidentiality and security
 - [NQAF 8] Assuring the quality commitment
 - [NQAF 9] Assuring adequacy of resources
- 3c. Managing statistical processes
 - [NQAF 10] Assuring methodological soundness
 - [NQAF 11] Assuring cost-effectiveness
 - [NQAF 12] Assuring soundness of implementation
 - [NQAF 13] Managing the respondent burden
- 3d. Managing statistical outputs
 - [NQAF 14] Assuring relevance
 - [NQAF 15] Assuring accuracy and reliability
 - [NQAF 16] Assuring timeliness and punctuality
 - [NQAF 16] Assuring timeliness and punctuality
 - [NQAF 17] Assuring accessibility and clarity
 - [NQAF 18] Assuring coherence and comparability
 - [NQAF 19] Managing metadata

4. Quality assessment and reporting

5. Quality and other management frameworks

19.26. *Quality assurance of the SITS statistical process.* NQAF identifies four components of quality assurance in this context, namely and implement its elements as needed, in particular in respect of:

- i. Assuring methodological soundness;
- ii. Assuring cost-effectiveness;
- iii. Assuring soundness of implementation; and
- iv. Managing the respondent burden.

19.27. The SITS compilers should be aware that methodological soundness is assured by the use of sound statistical methodologies based on internationally agreed standards contained in MSITS 2010 and good practices described in this Guide.

19.28. *Cost-effectiveness* is assured by such activities as the implementation of standardized solutions that increase effectiveness and efficiency, documentation of the costs of data production at each stage of statistical process and carrying out the cost-benefit analyses to determine the appropriate trade-offs in terms of data quality.

19.29. *Assuring soundness of implementation* implies such activities as staff selection and conducting training programmes that emphasize the importance of statistics that are fit for purpose, building in the production process data quality checkpoints and (as appropriate) sign-offs before proceeding to subsequent stages in the statistical life cycle, documenting procedures for the design, development, implementation and evaluation of the statistical compilations, and consulting with stakeholders, especially users and potential respondents, at all appropriate stages of the statistical life cycle.

19.30. *Managing the respondent burden* is necessitated by awareness of the requirement to collect information (user needs) should be balanced against production costs and the burden placed on respondents (supplier costs). Mechanisms to maintain good relationships with individual providers of data and to proactively manage the response burden are essential for improving quality. Dealing with this difficult challenge is particularly relevant in connection with the declining response rates in surveys. This decline lowers quality and increases the cost of surveys. Improving response rates requires a multi-dimensional strategy that addresses the issue of non-response at different stages of the survey process. This includes an assessment of the need to collect the information, the use of data from administrative sources or other surveys, and the use of sound statistical and survey methods to keep the burden to a minimum.

19.31. The SITS compilers should be proactive in managing the respondent burden and ensure that there are mechanisms in place to assess the necessity to undertake a new statistical survey, surveys apply sound methods to reduce or distribute response burden, to provide respondents with information about: the purpose of the SITS related surveys (including the expected uses and users of the statistics to be produced from the survey), the authority under which the surveys are taken, the collection registration details, the mandatory or voluntary nature of the survey, confidentiality protection, the record linkage plans and the identity of the parties to any agreements to share the information provided by those respondents.

19.32. *Quality assurance of SITS statistical outputs*. NQAF lists six groups of activities comprising quality assurance of statistical outputs:

- i. Assuring relevance;
- ii. Assuring accuracy and reliability;
- iii. Assuring timeliness and punctuality;
- iv. Assuring accessibility and clarity;
- v. Assuring coherence and comparability;

vi. Managing metadata

19.33. *Assuring relevance.* The SITS compilers should be aware that relevance depends upon the varying needs of users. The SITS compilers challenge is to weight and balance the conflicting needs of current and potential users in order to produce statistics that satisfy the most important and priority needs within given resource constraints. Relevance can be assured by consulting users about the content of the statistical work programme, prioritizing between different users' needs in the work programme based on analysis to support priority setting, establishing an advisory council to advise on overall statistical priorities, periodic review of the continuing relevance and cost-effectiveness of individual statistical programmes/domains, ensuring good understanding of the interdependencies between individual statistical programmes/domains and coordination, harmonisation and full coverage of statistical information produced by the national statistical system.

19.34. *Assuring accuracy and reliability* involves, for example, such activities as assessing and validating source data, intermediate results and statistical outputs; use of internationally recognized statistical techniques, comparing the obtained data with other existing sources of information in order to ensure their validity, clear identification of preliminary and revised data, provision of the explanations about the timing, reasons for and nature of revisions.

19.35. *Assuring timeliness and punctuality* implies, inter alia, a clear definition and publishing of timeliness targets (and amendments of such targets) for release policy, distinguishing between different kinds of statistical outputs (press releases, statistics specific reports or tables, general publications, etc.) and their corresponding release procedures; establishing the procedures to ensure the effective and timely flow of data from providers; explicit consideration of overall trade-offs between timeliness and other dimensions of quality (e.g. accuracy, cost and respondent burden) during the programme design stage; clear identification of preliminary data so that users are provided with appropriate information for assessing the quality of the preliminary data.

19.36. *Assuring accessibility and clarity* includes such activities as release of statistical results with readily accessible and up-to-date metadata covering concepts, scope, classifications, basis of recording, data sources, compilation methods, statistical techniques, etc. to allow for a better understanding of the data; consistent annotation of any differences from internationally accepted standards, guidelines, or good practices; use of modern information and communication technology used for dissemination (i.e. statistical databases and the agency's website as the main means of dissemination of statistics) in addition to traditional hard copy when appropriate; enabling users to generate their own tables in the most appropriate formats (xls, html, etc.); consulting users on a regular basis to find out about the formats of dissemination that they most prefer.

19.37. *Assuring coherence and comparability* implies, for example, cooperation and the exchange of knowledge between individual statistical programmes/domains; establishing of specific procedures and guidelines for individual statistical programmes/domains to ensure that outputs obtained from complementary sources can be properly combined (e.g., establishing a common repository of concepts, definitions and classifications available or do other mechanisms exist to promote coherence and consistency); clear identification and explanation of breaks in the series and the provision of methods for ensuring necessary data reconciliation.

19.38. *Managing metadata* encompasses such activities as provision of information covering the underlying concepts, variables and classifications used, on the methodology of data collection and processing, and indications of the quality of the statistical information to enable the user to understand all of the attributes of the statistics, including their limitations, for informed decision-making. This can be better achieved when the metadata management system is well defined and documented; procedures or guidelines for metadata maintenance and dissemination are in place; staff training and development programmes are in place on metadata management and related information and documentation systems; there is a systematic way for archiving metadata which also ensures that they are accessible for reuse in the future.

B.1. Country experience: European Union

19.39. The quality assurance in the European countries is based on the quality assurance framework of the European Statistical System (ESS). A brief description of this system is provided in box 19.2 below.

Box 19.2

Quality assurance in the European Statistical System (ESS)

1. In the European Statistical System (ESS) quality of statistics is managed in the framework of the European Statistics Code of Practice which sets the standards for developing, producing and disseminating European statistics.
2. In accordance with the 15 principles of the European Statistics (ES) Code of Practice and the provisions of Regulation (EC) No 223/2009 on European statistics, quality is approached along 3 lines: quality or characteristics of the institutional environment (6 principles), quality of the statistical processes (4 principles) and quality of the statistical output (5 principles). Each of the 15 principles of the ES Code of Practice (1st level of quality assurance) contains specific indicators which show how compliance with the principle can be demonstrated (2nd level of quality assurance). Compliance with the ES Code of Practice is regularly monitored through the ESS-wide exercise of peer reviews which start with a national self-assessment questionnaire – improvement actions identified in the peer review exercise are then monitored and reported upon on an annual basis.
3. As a 3rd level of quality assurance, the ESS Quality Assurance Framework (QAF) has been developed in 2011-2012. Similarly to other existing quality assurance frameworks like UNSD's NQAF, the ESS QAF provides methods and tools for implementation at institutional and process level for each of the indicators of the ES Code of Practice as well as links to relevant reference documentation. Therefore, it provides clear guidance to compliance assessors.

B.2. Country experience: Ireland

19.40. The Central Statistics Office of Ireland (CSO) is the national office responsible for compiling and publishing official Balance of Payments and related statistics (hereafter BOP) and for implementing the related quality assurance activities.

19.41. As for non-financial enterprises the surveys of manufacturing and non-financial service enterprises undertaken by the CSO are designed to meet international conceptual and

geographical requirements. Coverage is on a sample selection basis, those surveyed being selected on the basis of statistical register information concerning transactions with non-residents. About 450 companies make returns. Two types of grossing take place in the compilation of the results. For the enterprises who report annually an estimate is made for non-response. This estimate can vary from the last value carried forward to more complex trending/forecasting based on similarly sized and type of enterprises and current market conditions. For non-coverage a separate grossing exercise takes place for both services and profits. Using other data sources available (e.g. Annual Services Inquiry, Census of Industrial Production) the enterprises and data are matched and compared and an imputation is made for non-coverage based on a ratio derived by comparing the size of the overall data to the size of the unmatched data. This exercise also serves as a useful quality indicator in comparing data collected via different channels.

19.42. The survey information collected for all types of enterprises covers transactions with non-residents concerning purchases and sales of services, income flows, transfers, as well as acquisitions and disposals of foreign assets or liabilities. In order to facilitate compilation of the wider national accounts statistics the surveys also collect data on transactions of reporting enterprises with residents of Ireland. This allows a wide range of edit and plausibility checks; e.g., profits earned in relation to costs and sales; dividends paid relative to earnings.

19.43. In addition to the direct BOP surveys other data collected by the CSO (merchandise exports and imports and tourism expenditure and receipts) are used in the compilation of the Balance of Payments. Apart from survey data, data from other government departments and agencies is used (e.g. Department of Foreign Affairs on expenditure incurred in maintaining Ireland's embassies and consulates abroad).

19.44. The type of quarterly survey form issued to a company depends upon the type of company. The survey for *manufacturing and non-financial service companies (BOP40)* requests data on all resident and non-resident sales/purchases of services (including royalties, copyrights, licences, etc.), assets and liabilities (flows, stocks and reconciliation items) as well as related income transactions from companies incorporated in Ireland and Irish branches of foreign companies. Sectoral and geographic details are also required.

19.45. A qualified accountant is employed in the BOP&FS division. He provides advice (not only to BOP staff) on data queries from respondents and on the various plausibility and edit checks in place. The accountant also examines and compares the data reported on the BOP forms against the annual statutory accounts, where available. The accountant accompanies the responsible staff when visiting respondents. The major enterprises are visited at least once every two years while smaller enterprises are met less frequently. Enterprises are assessed on an on-going basis for their suitability for quarterly/annual reporting.

19.46. On receipt of a form data are loaded into the CSO's Sybase relational database where they undergo various automated consistency and plausibility checks. Further manual checking routines are carried out by statistical staff in BOP&FS. Depending on the materiality of the identified queries the CSO will make contact with the enterprise concerned in order to obtain corrections/clarifications. Once verified and any further processing has been completed the data from all surveys are assembled and the combined data subjected to further scrutiny and checking, at both a macro and micro level, by statistical staff in BOP A&D. If problems are detected at this stage the case can be referred back to the data collection division who can contact the company if necessary to resolve the issue. Apart from the general checking routines within the two BOP divisions a separate data consistency unit

exists within the National Accounts Division. This unit carries out checks on the consistency of monthly, quarterly and annual data returned by individual large manufacturing and non-financial service companies to various divisions within the CSO (including the BOP Division). Approximately 70 large companies or groups of companies are reviewed. Trade, BOP, monthly production and annual services data are considered on a company by company basis. Allowances are made for conceptual/technical differences and the quality of the reported data can be assessed.

19.47. The work of the Consistency Unit has been extended to rationalise the data collection for the 50 largest companies/groups referred to above. The Large Cases Unit (LCU) was set up in 2010 to coordinate the surveys issued to these enterprises. An important step was to examine the various CSO data requests and to ensure that any particular item of data was only requested once from the respondent. A combined survey form for these enterprise was designed which would collect not only the BOP data but also production, turnover, services, stocks and profits. The LCU is the central point of contact for these enterprise and works closely with both the enterprises and the various production divisions in the CSO to ensure quality and consistency of data, while at the same time minimising the burden on the respondent.

C. Quality measurement and reporting

19.48. Quality management implies that countries undertake steps to measure quality and report the results of such measurements to all participants of the statistical process and general public. In this connection this Guide recommends that countries develop a standard for regular quality reports that cover the full range of statistical processes and their outputs and use the quality dimensions listed in Section as its basis. Such reports can be either producer-oriented, with the aim of identifying strengths and weaknesses of the statistical process and leading to or containing the definition of quality improvement actions, or user-oriented, with the aim of keeping users informed on the methodology of statistical process and the quality of statistical output.

19.49. It is further recommended that quality reports on SITS be prepared at least every five years, or more frequently if significant methodological changes or changes in the data sources occur. For monitoring the quality of the processes and effectiveness of quality-improvement actions, reviews should be conducted more frequently. It is recommended that countries base their quality reports on a set of quantitative and qualitative indicators for international merchandise trade statistics, as well as on a checklist covering data collection, processing and dissemination, in order to assess the strengths and weaknesses in the statistical process and to identify possible quality-improvement actions.

19.50. Countries are advised to develop their own quality assessment frameworks on the basis of NQAF and the quality assessment frameworks developed by international, supranational and regional organizations.

19.51. *Quality measures.* Quality measures directly reflect a particular aspect of quality. For example, the time lag from the end of the reference period to the release of particular international merchandise trade statistics is a direct quality measure. However, in practice, quality measures can be difficult or costly to calculate. Instead, quality indicators can be used in the quality assessment.

19.52. *Quality indicators* are summarized quantitative or qualitative evidences about the quality of the data. They are generally defined with respect to some reference point and can assist in making different types of comparisons. When countries define the quality indicators for their international merchandise trade statistics, it is recommended that they ensure that the indicators satisfy the following criteria: (a) they cover all dimensions of quality as defined in section B above; (b) are based on the consistent application of a sound methodology; and (c) the indicators are easy to interpret both by internal and external users.

19.53. It is a good practice that countries maintain a balance between different dimensions of quality and the number of indicators. The objective of quality measurement is to have a limited set (minimum number) of indicators which can be used to measure and to follow over time the quality of the international merchandise trade statistics and to ensure that users are provided with a useful summary of overall quality, while not overburdening respondents with demands for unrealistic amounts of quality metadata.

19.54. *Suggested quality measures and indicators*. Table 19.1 presents a possible set of indicators (and measures) which countries might wish to consider for measuring the quality of SITS. The table is compiled on the basis of the quality measures and indicators recommended by various international organizations including the IMF, OECD and Eurostat. The utilization of such measures and indicators provides users with a clear and up-to-date overview of the overall quality of international merchandise trade statistics.

19.55. Most international organizations and many countries have developed definitions of quality, outlining the various dimensions (aspects) of quality and quality measurement, and have integrated them into quality-assessment frameworks. Although existing quality-assessment frameworks differ to some extent in their approaches to quality, including in number, name and scope of quality dimensions, they complement each other and provide comprehensive and flexible structures for the quality assessment of a broad range of statistics. A brief description of three such frameworks, namely *the IMF Data Quality Assessment Framework (DQAF)*³⁸³, *the European Statistical System (ESS) Code of Practice* and *the OECD quality measurement framework* is provided below, for details the compilers are advised to visit relevant websites.

19.56. The overall aim of the three quality assessment frameworks is to standardize and systematize statistical quality measurement and reporting across countries. They allow an assessment of national practices to be made against internationally (or regionally) accepted statistical approaches for quality measurement. The quality assessment frameworks could be used in a number of contexts, including for (a) guiding countries' efforts towards strengthening their statistical systems by providing a self-assessment tool and a means of identifying areas for improvement, (b) technical assistance purposes, (c) reviews of particular statistical domains as performed by international organizations, and (d) assessments by other groups of data users.

³⁸³ Available at: <http://www.imf.org/external/np/sta/dsbb/2003/eng/dqaf.htm>.

Table 19.1

Suggested indicators for measuring the quality of SITS

Quality dimension	Quality measure and indicator
Relevance	<p>1. Gaps between key user interests and compiled SITS in terms of concepts, coverage and detail; 2. Results of users' satisfaction surveys and meetings with user groups.</p> <p><i>EU practice:</i> The <i>relevance</i> aspect of quality is measured in terms of the <i>availability</i> of the international trade in services data to the final users. Data availability is measured through completeness and confidentiality.</p> <p>The method for calculating the availability for all requests considers the number of reported cells divided by the total number of requested cells according to the Regulation³⁸⁴. The data availability is calculated for all existing data requests R1, R2, R3³⁸⁵ in the reference period</p> <p>Measure of confidentiality takes into account the values of the flagged cells in the total value of provided cells, with substantial differences between the number of flagged cells and their values observed for some Member States.</p>
Accuracy	<p>1. Differences between two successive releases of the same dataset (vintages), in case of annual trade in services data and FATS 2. Application of reporting thresholds; 3. Under-coverage (% of non-reporting due to thresholds, % of non-reporting due to non-response); 4. Characteristics and frequency of revisions (e.g. as % of total value);</p> <p><i>Mean Absolute Percentage Error (MAPE)</i> may be used for characterising the size of revisions. MAPE shows the average percentage difference between initial and final estimates (between 0 and infinity inclusive). The higher is the value, the higher – the average size of revisions. When the result equals zero, there are no differences between the first and final estimates.</p> <p>MAPE is defined as follows:</p> $\text{MAPE} = \left| \frac{X_f^t - X_i^t}{X_i^t} \right| \times 100$ <p>Where, X_i^t = the initial estimate for characteristic X in reference year t. X_f^t = the last available estimate for the same characteristic in reference year t.</p> <p>5. Use of data validation techniques and their impact.</p> <p><i>In the case of sample surveys-based international merchandise trade estimates, the accuracy can be measured using the following indicators:</i></p> <p>6. Sampling errors; 7. Non-sampling errors: <ul style="list-style-type: none"> - Unit response rate, - Item response rate; </p>

³⁸⁴ See also Annex 1, Table 3 of Commission Regulation (EU) No 555/2012 of 22 June 2012 amending Regulation (EC) No 184/2005 of the European Parliament and of the Council on Community statistics concerning balance of payments, international trade in services and foreign direct investment, as regards the update of data requirements and definitions, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:166:0022:0066:EN:PDF>.

³⁸⁵ BoP VADEMECUM, Chapter 5.

	<p><i>The sampling error</i> can be measured by coefficient of variation (CV) taking into account the non-responses, the misclassification errors and, if necessary, the sampling error according to the survey design.</p> $CV = \frac{\sqrt{\text{estimate of the sampling variance}}}{\text{estimated value}}$ <p>A description of the sample design is needed, containing all information which is likely to affect accuracy and providing background information for the assessment and interpretation of sampling errors.</p> <p>8. Number and average size of revisions of particular datasets.</p>
Timeliness	1. Time lag between the end of the reference period and the date of the first release (or the release of final results) of international merchandise trade data.
Punctuality	<p>EU practice:</p> <p>Punctuality is calculated as the actual date of data delivery minus the scheduled date of transmission to Eurostat. It shows how many calendar days the data transmission was behind (positive value) or ahead (negative value) of the legal deadline.</p> <p>Example: Deadline for BoP SITS questionnaire Y1 is on 30 September of each calendar year. Country A sends the data on 27 September: the value will be -3; Country B sends the data on 4 October: the value will be +4.</p>
Accessibility	<ol style="list-style-type: none"> 1. Number and types of means used for dissemination of SITS; 2. Degree to which all detailed data sets are made available, as a percentage of total SITS data sets produced; 3. Dissemination of complete metadata used.
Clarity / interpretability	
Comparability	<p>1 Differences that can be observed when statistics related to the same domain are compared between geographical areas or over time. In the BoP quality report this component of quality is described by measuring asymmetries.³⁸⁶</p> <p><i>Asymmetries:</i> Quality Reports of Eurostat include, for each Member State (MS), an Annex with the absolute and relative values of asymmetries, calculated by Eurostat using the most recently delivered datasets. The asymmetry tables are covering all the items for which bilateral data are reported to Eurostat, including remittances and compensation of employee, but related only to the most recent reference period. The reporting includes relative and absolute asymmetries. Relative asymmetries calculated with a formula that gives equal weight to the datasets of the reporter and to the mirror data. Absolute and relative values of asymmetries are calculated whenever the data are available, using also the data flagged as "N", non-publishable by the reports. Only the data flagged as "C" Confidential are not used in this calculation. Moreover, asymmetries are persistent in case the top asymmetries for country A, post and flow are generated by the same partner country B for more than one year.</p>

³⁸⁶ For FDI: use of the FDI network (which should reduce asymmetries in FDI).

Coherence	<p>1. Use of common concepts, classifications, data sources and methods; 2. Availability of appropriate bridging tables.</p> <p>Eurostat experience:</p> <p>Quality Reporting focuses on consistency of statistics produced for different purposes. This component of quality is described by measuring the internal consistency (respect of integrity rules, coherence between the quarterly and annual data, size of Errors and Omissions), and external consistency (coherence between BoP data and similar statistics belonging to different statistical frameworks); only external consistency related to BoP goods and FTS data (Intrastat and Extrastat) is monitored.</p> <p>Consistency with integrity rules: Integrity rules state that the sum of the components should be equal to the aggregates. The integrity rules are defined by a set of equations, which should be respected in the datasets transmitted to Eurostat. Consistency is assessed as excellent if no inconsistency was detected, and good if from 2 to 5 small inconsistencies solvable by Eurostat were noticed. In case of resending of data (marked with an asterisk in the table) due to irresolvable inconsistencies, the last sending has been considered for assessment. (See website for details).</p>
Integrity	<p>1. Statistics are produced on an impartial basis. 2. Choices of sources and statistical techniques as well as decisions about dissemination are informed solely by statistical considerations. 3. The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics. 4. The terms and conditions under which statistics are collected, processed, and disseminated are available to the public. 5. Internal governmental access to statistics prior to their release is publicly identified. 6. Products of statistical agencies/units are clearly identified as such. 7. Advanced notice is given of major changes in methodology, source data, and statistical techniques. 8. Guidelines for staff behavior are in place and are well known to the staff.</p>
Credibility	
Methodological soundness	<p>1. Number and degrees of divergences from the relevant international statistical standards in concepts and measurement procedures which are used in the collection and compilation of SITS (preferably in terms of the amount of data affected).</p>

C.1. The IMF's Data Quality Assessment Framework (DQAF)

19.57. The IMF's Data Quality Assessment Framework (DQAF) was developed to address the IMF Executive Board's interest in data quality. Besides its use in the assessment of the quality of countries' macroeconomic statistics, the DQAF format is also used as standard presentation of metadata within the GDDS and SDDS standards.

19.58. DQAF comprehensively covers the various quality aspects of data collection, processing and dissemination. The Framework is organized as a cascading structure covering the prerequisites of quality and five dimensions of quality: assurances of integrity, methodological soundness, accuracy and reliability, serviceability and accessibility. For each dimension, the DQAF identifies 3-5 elements of good practice, and for each element, several relevant indicators. Further, in a cascading structure, more detail and more concreteness tailored to the dataset are provided by focal issues and key points. The prerequisites of quality broadly cover legal and institutional environment, resources and other quality management. A full description of the generic DQAFs can be found at

<http://dsbb.imf.org/pages/dqrs/DOAF.aspx> Quality aspects of data collection, processing, and dissemination in relation to international trade in services are embedded in the various quality dimensions of the balance of payments framework according to BPM6.

19.59. A new dissemination format for the balance of payments metadata is using standardized web forms that are accessible via an Integrated Correspondent System (ICS). This reporting method is meant to provide reporting countries with an easy-to-use and efficient system for reporting data and metadata to IMF.

C.2. Eurostat quality assessment and reporting

19.60. Quality reports prepared by international organisations should follow up on the quality of the received data and measure how these data meet common quality standards, included in the respective quality frameworks. In the ESS, quality reporting is in general endorsed and laid down by sectoral, i.e. domain-specific legislation (e.g. Regulation (EC) No 184/2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment³⁸⁷ and Commission Regulation No 1055/2008 implementing Regulation (EC) No 184/2005 as regards quality criteria and quality reporting for balance of payments statistics³⁸⁸, as amended by Commission Regulation (EU) No 1227/2010³⁸⁹).

19.61. In accordance with the ES Code of Practice and the Regulation (EC) No 223/2009 on European statistics, the main issues concerning the quality of the statistical output can be described based on 8 quality criteria (or quality components): Relevance, Accuracy, Timeliness and punctuality, Coherence and comparability, Accessibility and clarity. In the ESS, general guidance is provided on how to report on these quality criteria (cf. the ESS Handbook for Quality Reports³⁹⁰) and a list and descriptions of 16 underlying standard quality indicators are also defined (cf. Template for Quality and Performance Indicators³⁹¹).

19.62. Eurostat's quality reporting and assessment for the 27 EU Member States is an annual procedure in five steps. First, quality indicators and requirements are defined (see section B paragraphs 20.4. – 20.17.), secondly, the pre-filled National Quality Reports are sent to the Member States, thirdly a completed quality report is prepared, then an assessment report is filled in and finally the summary of the Quality Report is sent out.

19.63. Each year a quality reporting template is prepared by Eurostat which encompasses all the quality criteria defined in the ES Code of Practice and the Regulation (EC) No 223/2009 on European Statistics and is implemented by Commission Regulation (EU) No. 1227/2010 of 20 December 2010.

19.64. Eurostat sends the template (see also Annex of the CG, QR Template) with the pre-filled quality reports for comments to all 27 Member States. The reports and the annexes with data used for estimating the indicators, reconciliation tables BoP/FTS³⁹² and bilateral asymmetries are pre-filled by Eurostat. In the quality assessment only the data required by

³⁸⁷ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:035:0023:0055:EN:PDF>.

³⁸⁸ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:283:0003:0004:EN:PDF>.

³⁸⁹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:336:0015:0016:EN:PDF>.

³⁹⁰ http://epp.eurostat.ec.europa.eu/portal/page/portal/ver-1/quality/documents/EHQR_FINAL.pdf.

³⁹¹ http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/Quality_Performance_Indicators_FINAL_v1_1.pdf.

³⁹² International Trade in Goods Statistics.

the BoP Regulation are taken into account.³⁹³ The Member States send back the completed quality reports and reconciliation tables, with comments and filled-in parts on plausibility, accessibility, clarity and comparability.

C.3. *OECD Quality Framework for Statistical Activities*³⁹⁴

19.65. The quality of statistics produced and disseminated by the OECD depends on two aspects, the quality of statistics received from national statistical agencies, and the quality of internal processes for collection, processing, analysis and dissemination of data and metadata. There is a clear inter-dependence between these two aspects: on the one hand, in several fields, such as Balance of Payments statistics, national statistics are developed closely in accordance with international standards (BPM6); on the other hand, statistical processes at international level are often derived from best practices developed at national level.

19.66. Whilst the quality of data and metadata obtained from national agencies is a very important aspect of the quality of OECD output, it is assessed on a regular basis by the managers of statistical activities, and the relevant OECD Committees, Working Groups or user Directorates, in partnership with the national agencies and in accordance with quality assessment procedures specifically designed for that purpose. The OECD Quality Framework for Statistical Activities focus on enhancing the quality of data used, produced, and disseminated by the OECD through improvements in the Organisation's statistical processes and management within a decentralised statistics environment.

19.67. The OECD Quality Framework for Statistical Activities has four elements: (i) a definition of quality and its dimensions; (ii) a procedure for assuring the quality of proposed new statistical activities; (iii) a procedure for evaluating the quality of existing statistical activities on a regular basis; and (iv) a set of broad principles on which OECD statistical activities are to be conducted and quality guidelines covering all phases of the statistical production process, i.e., definition of the data requirements; evaluation of available data; planning and design of the statistical activity, extraction of data and metadata from databases within the OECD and external to the OECD; implementation of a specific data and metadata collection process; data and metadata verification, analysis and evaluation; data and metadata dissemination.

19.68. The OECD views quality in terms of seven dimensions: relevance; accuracy; credibility; timeliness; accessibility; interpretability; and coherence. These are very similar to the quality dimensions used by other international organisations and described at the beginning of the chapter with a presentation of the UNSD National Quality Assurance Framework (NQAF) Glossary definitions. Another factor highlighted in the OECD Framework is that of cost efficiency, defined as a measure of the costs and provider burden relative to the output. While cost-efficiency is not seen as a quality dimension, it has to be taken into account in any analysis of quality as it can affect quality in all dimensions.

³⁹³ See also Annex 1, Table 3 of Commission Regulation (EU) No 555/2012 of 22 June 2012 amending Regulation (EC) No 184/2005 of the European Parliament and of the Council on Community statistics concerning balance of payments, international trade in services and foreign direct investment, as regards the update of data requirements and definitions, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:166:0022:0066:EN:PDF>.

³⁹⁴ <http://www.oecd.org/std/qualityframeworkforecdstatisticalactivities.htm>.

C.4. Country experience: United Kingdom - quality assurance

19.69. Quality assurance is a critical part of producing the statistics which ensures that the methods have been correctly applied and that the statistics are robust and fit for purpose. It is recommended that organisations produce, document, implement, monitor and maintain a quality assurance strategy, policy and quality assurance procedures. These should be specific to regular publications, new outputs and changes to outputs. They should include statistical outputs derived from surveys, administrative sources and other secondary sources

19.70. Quality assurance should be built in at each step of the process, including:

- i. the selection of the methods;
- ii. ensuring issues related to the quality outcomes of the methods chosen are identified;
- iii. careful checking of the outcomes of the applications of the methods;
- iv. ensuring that a sufficient range of stakeholders are engaged in the quality assurance process.

19.71. Compilers should adopt quality assurance procedures, including the consideration of each statistical product against users' requirements, and of their coherence with other statistical products. The quality assurance policy should include aspects such as control, improvement processes, quality measures, documentation and awareness-raising. The quality assurance procedures should specify clear ownership and accountability for statistics and related products.

19.72. Appropriate validation to minimise the risk of errors should also be included in the quality assurance procedures. This could include:

- i. validation built into the production processes wherever possible;
- ii. internal validation checks – for example, checking against previously produced outputs from the same source, or parallel running by two people where there is a large degree of manual intervention;
- iii. external validation checks – for example, 'sense-checking' against other relevant sources

19.73. For all regular statistical outputs a programme of periodic reviews should be planned and undertaken; these should cover quality, methodologies and processes.

C.5. Continuous improvement

19.74. One recognised good practice in relation to continuous quality improvement is process measurement. A process is a series of actions or steps towards achieving a particular end; process quality is an assessment of how far each step meets defined criteria; and process variables are factors that can vary with each repetition of the process. It is recommended that producers of official statistics define and produce a selection of process quality measures to

provide an indication of the overall quality of processes and facilitate continuous quality improvement.

19.75. For official statistics produced from surveys, examples of process quality measures are the percentage of ineligible sampling units found in the sample, the proportion of proxy interviews by survey, travel time for interviewers, and scanning/keying error rates.

19.76. When dealing with statistics produced from administrative sources, process quality measures may be the number of queries from the statistical producer to the administrative data supplier, and the percentage of data items changed during quality assurance.

C.6. Quality assurance for new or improved methods

19.77. When adopting new or improved methods, quality assurance procedures should be used. These should include assessing the impact on the statistical series of adopting the new methodology and subjecting the proposed methodology to peer review. Various mechanisms exist to gain input from experts into the suitability of new or improved methods. The setting up of specific peer review groups and collaboration with users, academics and subject matter experts, for example industrialists or demographers, can also be considered or simply peer review from a statistical colleague.³⁹⁵

D. Country experiences in reconciliation studies, cross-country comparability and bilateral data exchanges

D.1. Country experience: Spain - Automatic editing on MoS

19.78. In order to better control the quality of data on Modes of Supply in International Trade in Services, INE has developed a software tool for recording and fieldwork treatment to facilitate the automatic editing of MoS in the ITS questionnaire. This software tool ensures that the editing rules defined by the statistical expert are applied exhaustively and automatically on all recorded questionnaires (registers). The recorded questionnaires are either automatically downloaded into the tool (in the case of web questionnaires) or recorded by hand in the case of hard copy questionnaires.³⁹⁶

19.79. The editing rules in the tool are classified in two types: "strong" or "fatal" edits and "weak" edits. Fatal edits imply that the questionnaire is not validated and INE staff has to call the respondent to solve it. Weak edits do allow continuing with the questionnaire recording and subsequent validation processes but an explanation must be included in the "Observations" field.

19.80. Four editing rules are applicable to MoS section in the ITS survey:

- i. a **fatal edit** is implemented to when a MoS has been associated to a non-service item (note: INE informs respondents that only services items can have a MoS associated).

³⁹⁵ UK Statistics Authority, National Statistician's Guidance, Quality Methods and Harmonisation <http://www.statisticsauthority.gov.uk/national-statistician/ns-reports--reviews-and-guidance/national-statistician-s-guidance/>.

³⁹⁶ According to INE policy, respondents can choose whether to answer questionnaires in hard copy or via the web (although CAWI is strongly recommended).

- ii. a **weak edit** is implemented when a Mode 3 association is (wrongly) made to non-construction services (note: the INE ITS survey is a BoP services survey and most of Mode 3 is not covered).
- iii. a **weak edit** is implemented when a Mode 2 association is (wrongly) made to services that theoretically cannot be supplied by this mode according to MSITS 2010 (note: Travel is not covered by the ITS survey; see the MSITS for the non-travel services that could be supplied by Mode 2 (e.g. manufacturing, maintenance and repair)).
- iv. a **fatal edit** is implemented as to admit only Mode 1 for supplying the ex-service item of merchanting.

D.2. Country experience: Luxembourg - bilateral asymmetries in financial services

19.81. Luxembourg is a small space, very open economy anchored on foreign trade, generating thereby significant international transactions and important capital flows. The high degree of openness affects the labour market too: by the end of 2012, foreign cross-border workers residing in neighbouring countries, represent nearly 44% of the total domestic wage-earners. The economic relationships between residents and the rest of the world are summarized in the Balance of Payments (BOP).

19.82. Under the law of 28 June 2000, the Banque centrale du Luxembourg (BcL) and the Institut national de la statistique et des études économiques (STATEC) are jointly responsible for establishing the BOP of Luxembourg since first of January 2002 onwards. For periods prior to 2002 only joint data for Belgium and Luxembourg are compiled by the Nationale Bank van België/Banque Nationale de Belgique. The organic law of Statec, dated July 10, 2011, confirms the principle of shared competence (BcL/STATEC) in the field of BOP statistics.

19.83. Asymmetries with partner countries have always been a major concern for Luxembourg compilers. Systematic mutual exchange of results and underlying data with partner countries led to significant reductions in asymmetries in different areas. Compensation of employees and related transfers are a good example in this regard.

19.84. Financial services (mainly investment fund management and international private banking) are one of the mainstays of the national economy. International trade in financial services as reported by Luxembourg in its BOP (and in National accounts) is very important. However recent asymmetry tables produced by Eurostat identified persistent bilateral asymmetries in the field of financial services between Luxembourg and selected partners. An in depth analysis showed that the origin of the differences lies in the treatment of asset management costs taken out of income.

19.85. The investment fund industry in Luxembourg (UCIs - Undertakings for collective investment) is the largest in Europe and serves mainly non-residents. By end of June 2013 a total of 3890 UCIs held net assets for a global value of 2487 billion euros. Almost all the activity (assets/liabilities) focuses on the external sector. In principle domestic UCIs have no staff, no offices, do not directly charge fees and in most cases income earned (on assets) is capitalized (i.e. not distributed to investors). Following the official list as of 30 June 2013, published by the supervisory authority (CSSF – Commission de surveillance du secteur financier), 359 resident companies are authorised to act as management companies of UCIs.

Resident UCIs incur expenses for management and administration, payable in a very large extent to the resident management companies. A priori, these transactions between residents are outside of the field of BOP statistics.

19.86. Based on a recommendation stemming from the European Monetary Institute and in line with National Accounts concepts, Luxembourg introduced in its BOP time series a procedure to consider the management fees that are implicitly passed on to the investors.³⁹⁷ The economic substance is revealed by rerouting. All income (on foreign or domestic assets) earned by the UCIs is assigned simultaneously to the investors, regardless if distributed or not. Therefore, property income earned by the fund determines the income of its unit holder (investor). The offsetting of the income assignment to the investor (debit – portfolio investment (PI), dividends) are both the management fees assigned to the non-resident investors (credit financial services) and the reinvestment of the income (credit financial account, PI, liabilities, equity).

19.87. The bilateral asymmetries observed, have their origin in this specific treatment. For one reason partner countries do not always have the necessary information to perform the corresponding records. Indeed, it is assumed that many shares of Luxembourg based UCIs are held by non-resident households whose financial activities are probably not routinely covered by surveys. For another reason, the procedure applied by Luxembourg is not included in BPM5, unlike BPM6.

19.88. However, a weakness of the procedure has to be mentioned: the uncertainty related to the geographical breakdown. For portfolio investment, liabilities (transactions and related income), only «World» figures (without any geographical breakdown) are requested by international organisations, as often investors are unknown. But concerning the financial services the breakdown by country of non-resident PI investors is needed to fulfil the data requirements. The data source used is the annual reporting to the supervisory authority (CSSF): Annex VI - COUNTRY IN WHICH THE UCI IS MARKETED : «A specific list shall include the main countries in which units or shares of the UCI (to be classified by ISO codes) are marketed with an estimate of the percentage of shares or units invested in each country». Doubts about the geographical distribution are permitted, although one can assume that the magnitudes seem plausible.

19.89. The financial services earned by resident management companies are very often retroceded (as well as financial services) to non-resident promoters (initiators of the UCIs – in principle an international banking or asset management group) and advisors. If retrocessions take the form of dividends (or reinvested earnings) relevant entries are made under income on foreign direct investment (debit).

19.90. The changing legal environment in the field of UCIs leads on the one hand to a restructuring or rationalisation of domestic management companies (synergies, scale economies), and on the other hand to an even more pronounced internationalization (freedom to provide services).

19.91. The alignment between National Accounts and BOP entails a growing number of reroutings in BOP: financial services assigned to investors, calculation of implicit financial services (FISIM), income attributable to policyholders in insurance, etc. The rearranging of

³⁹⁷ BPM6, paragraph 10.124.

transactions for statistical purposes does not necessarily favour a decrease in bilateral asymmetries.

D.3. Country experience: ECB/Eurostat - Bilateral data exchange – FDI network

19.92. The FDI Network is a joint ECB/Eurostat initiative, which has been developed in close cooperation with FDI compilers from all Member States. Its aim is to tackle asymmetries in FDI and, as a consequence, to improve data quality. To reach this purpose, the FDI Network facilitates a secure exchange of information between national compilers on specific FDI transactions.

19.93. FDI compilers use the Network as a tool to support their production process. Overall, this is perceived as a positive initiative towards the reduction of bilateral asymmetries and the improvement of the quality of the FDI figures produced at national and EU level. Although the FDI Network was first targeted only to the exchange of flows on a continuous basis, the successful results have pushed towards its extension to the exchange of positions. A first general exercise to exchange FDI positions took place in 2012 and is being repeated annually.

19.94. *Statistics on the use of the FDI network.* The main statistics of the transactions exchanged through the network are the number of files and amounts exchanged in EUR billion. The statistics are capturing three periods: 2009-2010, 2011 and 2012; the data are presented distinguishing between the activity of the participating countries as initiators of transactions and as recipients (counterparts).

19.95. In accordance with the provisions of the FDI Network Manual, Eurostat monitors regularly the results of the reconciliation process of the transactions exchanged through Network. For that purpose Eurostat delivers a pre-filled template to the FDI Network users who are requested to validate, correct or complete it for the transactions in which they have been involved (both as initiators or recipients).

19.96. *Confidentiality.* [Additional text is to be inserted here.]

19.97. Transactions taken into account for a specific reconciliation round are related to transmissions exchanged in a certain period e.g. 1st January until 31st December of the reference year. These transactions were introduced into the template and sent out by Eurostat asking the FDI Network users to amend the information of those transactions where they acted as an initiator or – in a second sheet - as a counterpart. The compiler Member State completed the template for their transactions.

19.98. FDI asymmetries can be analysed from two different points: At EU-28³⁹⁸ aggregate level using data available from quarterly BoP, as well as annual FDI, and on a bilateral level using mirror FDI data for those countries more actively using the FDI network. The analysis of the counterpart countries are based on net figures reported by countries while the transactions exchanged true the network are expressed normally in gross values. The asymmetries are calculated separately for inward and outward flows. The tables indicate the decrease of asymmetries and the status of several transactions within a period.

³⁹⁸ Croatia is not included in the tables above (as before 1st July 2013).

19.99. The bilateral exchange of data (flows/stocks) could improve the quality of transmitted data. Reconciliation in the FDI network leads to a number of closed cases whereas the number of transactions failed is representing the lowest amount. The reasons for failure are in general incorrect received information from the company or some methodological differences in Member States made it impossible to reach a common conclusion.

Chapter 20 Data and Metadata Dissemination

20.1. *Scope.* This chapter consists of the following sections: Section A - Data and metadata dissemination: an introduction, Section B - Factors to consider in data and metadata dissemination, Section C - Integrated presentation of resident-nonresident trade in services statistics, FATS and other statistics, Section D - Combined presentation of international merchandise and services trade statistics

A. Data and metadata dissemination: an introduction

20.2. *Importance of dissemination of statistical information.* Availability of official statistics in general and statistics of international trade in services in particular is one of the cornerstones of public confidence in good government as such statistics can inform the debate and decision-making both by governments and by the wider community. This Guide highlights the importance of countries' adherence to the UN Fundamental Principles of Official Statistics which, inter alia, state that:³⁹⁹

- i. Official statistics “provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public”;
- ii. These statistics should be made “available on an impartial basis by official statistical agencies to honor citizens' entitlement to public information”;
- iii. The statistical agencies should “facilitate a correct interpretation of the data”, and, therefore, have “to present information according to scientific standards on the sources, methods and procedures of the statistics”;
- iv. The statistical agencies “are entitled to comment on erroneous interpretation and misuse of statistics”.

20.3. In the light of these Principles, the dissemination of data and metadata should be carried out with great care and attention to the needs of users while, at the same time, ensuring adequate confidentiality of data providers. Dissemination enhances accessibility of statistical information and constitutes an indispensable building block of the integrated statistical production process.⁴⁰⁰

20.4. Below, is a brief description of several good practices which countries are advised to follow in setting up their SITS dissemination policy

20.5. *Equal treatment of users.* All users should be treated equally and data should be disseminated without preference to any national or international user group. To ensure that such treatment is upheld it is a good practice to make all kinds of trade data available to all users at the same predetermined time.

20.6. *Ensuring an adequate user access.* Good access to data and metadata requires that they are made publicly available in a clear and understandable manner; forms of dissemination are adequate; and statistics are made available on an impartial basis and are

³⁹⁹ The Principles are available at <http://unstats.un.org/unsd/methods/statorg/FP-English.htm>.

⁴⁰⁰ Guidelines on Integrated Economic Statistics.

up-to-date; and prompt and knowledgeable support service is available to users. The information should be publicly available in appropriate formats and through appropriate delivery channels, and should be written in plain language adapted to the level of understanding of the main user groups. Metadata should be available in a number of user-friendly formats (for example, as “Frequently-Asked Questions”) at different levels of technical detail to meet different user needs.

20.7. *Advanced release schedule.* Users often have more confidence in the integrity of the statistics if they are released according to a published advanced release schedule giving the date (and preferably the time) when the figures will be available to all users. It is essential that the dates in the schedule are met.

20.8. For a major statistical release, it is often helpful for the statistical agency to organize a press briefing event. Good access implies that users be provided with adequate information on how and where to access key information, the contact person and other services including information on any charges. Where feasible, special data services could be provided including special or non-standard groupings of data items or outputs, and their usefulness and their costs. The highlights could be used to convey significant findings, comparisons, and trends to assist the media, and other users, in understanding and using the publications. This approach helps to demonstrate the relevance of external sector statistics to the general public and fosters informed decision-making throughout society more effectively.

20.9. *Importance of metadata dissemination.* The statistical agency responsible for SITS must ensure that users are able to access and correctly interpret the information on statistical methods, concepts, variables and classifications used in producing statistical results. Additional guidance on dissemination of metadata:

i. *Layered presentation of metadata.* Data Compilers must make sufficient metadata available to enable the least and the most sophisticated users to readily assess data and their quality. It is a good practice to structure metadata in layers of incremental detail while providing clear links between high-level and specific metadata concepts. Such layered presentation allows meeting the needs of diverse groups of users who may have different levels of statistical expertise.⁴⁰¹

ii. *Presentation of structural and reference metadata.* It is advisable that structural metadata are presented as an integral part of the database on the international trade in services and FATS statistics in a way that it can be extracted together with any data item and published as part of statistical tables; it is a good practice that data query options include all relevant metadata variables and they can be extracted by default unless explicitly “unlocked” by the user. Reference metadata can be presented as a detailed explanatory note describing the scope, coverage, and quality of a dataset and can be made available electronically alongside the database or in special publications.

iii. *Access to metadata.* Compilers of international trade in services and FATS statistics should make every effort to ensure that users have ready access to metadata through multiple dissemination channels, both in printed and in electronic format (whereby Internet dissemination plays a key role). As a general

⁴⁰¹See OECD, *Data and metadata reporting and presentation handbook*, 2007, page 22.

rule, metadata is considered to be of a high interest for public, their on-line dissemination should be free of charge, regardless of whether the statistics they describe are disseminated for a fee according to the compiling organization's policies.⁴⁰² Any deviations from international standards or discrepancies as against related statistics (e.g., balance of payments, tourism statistics, etc.) should be notified and adequately explained to the reader.

iv. *Application of SDMX.* Whenever feasible, it is a good practice that data compilers of international trade in services and FATS statistics disseminate their metadata using standardized concepts that are relevant across statistical domains (e.g., by adopting cross-domain concepts from the SDMX framework (Annex 4). The aim should be to promote harmonization of statistical information and their related high-level metadata across various institutions and statistical domains, even if some specific metadata concepts are not applicable or are organized differently in different domains or institutions.

A.1. *Coherence between disseminated datasets*

20.10. Coherence of SITS refers to coherence between monthly, quarterly and annual data, and coherence between the various data sets of SITS.

20.11. Regarding coherence between monthly, quarterly and annual data countries are advised that the data for the fourth quarter (or for the twelfth month) need to be compiled and disseminated in their own right and should not be derived as the difference between the annual totals and the sum for the first three quarters (or eleven months) in order to provide undistorted data for all months and quarters. It is a good practice to provide in reference metadata an appropriate explanation in this respect to assist users in the correct interpretation and use of the data. It is also a good practice to make users aware of particularly significant cases of non-additivity over time, and to provide the reasons for their existence.

A.2. *Coherence between the various data sets of SITS*

20.12. *Payment for dissemination.* The capacity of users to pay for data is a factor to be considered in the selection of the best data dissemination method. If users have a limited capacity to pay, and especially where the broad dissemination of data is desired, making data freely available electronically, or providing users access through making hard copies available at libraries would be useful. Regular data dissemination should satisfy most if not all user needs. However, some users might have special needs which would require quite complex data extraction, which the users themselves might not be able to perform. It is a good practice to offer such users premium data extraction services on a fee basis. Countries should ensure that users are made fully aware of all available options for obtaining the required data.

20.13. *Working with the media.* Thus it is in the best interest of the agency responsible for disseminating external sector statistics to build a strong working relationship with the media, to make it easy for journalists to report on statistical information in an accurate, timely and informative manner, and to take steps to increase media coverage as a way of reaching the broader society with important statistical information.

⁴⁰² See OECD, *Data and metadata reporting and presentation handbook*, 2007, page 22.

20.14. *Dissemination of data to regional, supranational and international organizations.* This Guide encourages countries to cooperate with these organizations to identify and apply the most efficient ways of dissemination of their trade statistics and related metadata. It is a good practice to review the Statistical Data and Metadata Exchange (SDMX) format for possible use in the exchange and sharing of their data.

B. Factors to consider in data and metadata dissemination

B.1. Variables to be disseminated and periodicity

20.15. MSITS 2010 contains recommendations with respect to the kinds of data variables that should be considered for dissemination. Taking into account the elaboration of the data variables provided in this Guide, countries are encouraged to disseminate SITS data as follows:

i. *Statistics on value of services in resident/non-resident transactions.* Following the recommendations of MSITS 2010 and the value data should be broken down by: (1) two trade flows (exports and imports), (2) EBOPS 2010, by 12 first level categories as a minimum but preferably by all relevant sub-categories, (3) trading partners. The corresponding structural metadata items should be made available as well (see Chapter 18); dissemination of these data should be closely coordinated with dissemination of BOP statistic. It is a good practice to disseminate preliminary estimates of the selected key aggregates monthly. Countries are advised to disseminate main aggregates of such data (by main EBOPS categories and by trading partners) on a quarterly basis. The full detailed data sets should be disseminated annually.

ii. *FATS.* The selection of variables which should be disseminated depends on the quality assessment of the compiled variables and the information needs of the country. However, efforts should be made to disseminate the variables identified in MSITS 2010 and elaborated in Chapter 15 of this Guide, namely: (i) sales (turnover) and/or output; (ii) employment, (iii) value added, (iv) exports and imports of goods and services, (v) number of enterprises. These should be broken down by activity and product classifications as well as by partner country as appropriate (see chapter 15 for details). Coherence of the disseminated FATS and other economic statistics should be ensured as well as the dissemination of appropriate structural and reference metadata. It is a good practice to disseminate preliminary estimates of the selected key aggregates quarterly. The detailed data sets should be disseminated annually.

iii. *SITS by modes of supply.* It should be recalled that allocation of SITS variables by modes of supply is seen as part of SITS compilation process (see Chapter 14). Provided that such an allocation is performed following the recommended procedures countries are advised to disseminate so obtained data on annual basis.

iv. *Non-monetary data on supply of services by modes 2 and 4.* As discussed in Chapter 16 such non-monetary data may include data on number of persons crossing borders (or trips) broken down by several classification criteria appropriate for such modes. Countries are advised to pay a special attention to the dissemination of the relevant structural and reference metadata in order to ensure

the correct interpretation of the data. It is a good practice to disseminate preliminary estimates of the selected key aggregates monthly. As a minimum requirement, countries are advised to disseminate main aggregates of such data (e.g., by main categories of persons (trips), country of origin/destination, purpose of travel/stay, duration) on a quarterly basis. The full detailed data sets should be disseminated annually.

B.2. *Timeliness*

20.16. *Timeliness* of the dissemination is one of the recommended quality dimensions of SITS and should be fully taken into consideration when developing the release schedule. To assist countries in deciding on the timeliness aspects of dissemination of SITS answering the following questions could be helpful⁴⁰³: (i) What gap of time exists between the reference period, the time when the data were collected, and time when the statistics became available? (ii) Are there likely to be subsequent surveys or data collection issues for this topic? (iii) Are there likely to be updates or revisions to the data after official release? (iv) What is the gap between the advertised and actual release dates of the data?

20.17. *Dealing with the timeliness versus reliability and accuracy trade-off.* In producing data there is usually a trade-off between the timeliness, on the one hand, and the reliability, accuracy and level of detail of the published data, on the other hand. Recognizing this trade-off, this Guide encourages countries, while making relevant decisions, to take into consideration a number of factors such as user requirements, timing of the collection of initial and revised data from various sources. It is a good practice to explicitly discuss this trade-off with major user groups, to reach an understanding on the best solution, and to make this understanding publicly available.

20.18. *Advance release calendar.* This Guide advice that (a) countries announce in advance the precise dates at which those statistics will be released and revised and (b) this advance release calendar is posted before the beginning of each year on the website of the national agency responsible for the dissemination of the official trade statistics. While implementing those recommendations and encouragements it is a good practice to make clear the dates on which the provisional estimates and the final data (no more subject to regular revision) will become available. Also, it is a good practice to inform users about availability of such calendar using all appropriate means of communication.

20.19. *Early dissemination of provisional estimates.* To improve timeliness in the dissemination of SITS, it is a good practice to publish on a regular basis the provisional estimates of total exports and imports, as well as of trade by major service categories and main partners, soon after the end of the reference period. Such estimates, by their nature, would be based on relatively limited data content and are to be replaced by more accurate, but less timely figures at a later date. However, compilers and users must be aware of the trade-off between quality (size of revisions) and timeliness - e.g., it is generally not a good practice to publish frequently large revisions; and quality aspects need to be taken into account when deciding on the frequency of publication.

20.20. *Guidelines on the data release.* This Guide encourages countries to issue the first releases of data as follows: (a) monthly totals of exports and imports within 45 days after the end of the reference month, at least by major trading partners and main categories of

⁴⁰³ See BPM6 Compilation Guide, paragraph 17.4.

services; (b) quarterly data within 60 days after the end of the reference quarter; (c) annual data within 90 days after the end of the reference year.

B.3. Statistical confidentiality

20.21. *Statistical confidentiality.* Statistical confidentiality refers to the protection of information of individual statistical units and has to be differentiated from other forms of confidentiality under which information is not disseminated due to other considerations, for example due to national security concerns. It is a good practice to always strive for a full coverage of all flows and stock which are in scope of SITS while applying appropriate methods to keep certain information confidential. This Guide recognizes, however, the necessity of both statistical confidentiality and of balancing it against the need for public information in cases where the application of statistical confidentiality would limit or make it impossible to provide sufficient or meaningful information. It is also good practice to disseminate along with the data a quantitative indicator of the amount of goods subject to confidentiality (see table 19.1).

20.22. *Development and implementation of confidentiality rules.* Following the recommendation adopted by the Commission for international merchandise trade statistics the Guide advises countries, whenever possible, to consider applying passive confidentiality, i.e., to treat data as confidential only when the trader requests so and the statistical authority finds the request justified based on the confidentiality rules, as much as possible, unless the use of active confidentiality is already the established, desired and accepted practice. It is further recommended that in suppressing data due to confidentiality, any information deemed confidential (suppressed) be reported in full detail at the next higher level of commodity and/ or partner aggregation that adequately protects confidentiality. However, the implementation of recommendations on statistical confidentiality depends to a large extent on each country's legislation and the general confidentiality policy adopted by its statistical system. An important challenge in the implementation of confidentiality rules is to ensure that confidentiality is applied across all the different classifications in which data are disseminated.

20.23. *Informing about confidentiality rules.* It is a good practice that all countries develop and publish an overview of their confidentiality rules with respect to international merchandise trade data so that data reporters are assured that their right to confidentiality is guaranteed while data users are informed about certain data limitations, enabling them to use the data more appropriately. It is also a good practice to provide users details on what data areas are affected most by the application of confidentiality rules and the magnitude of this effect.

20.24. *Treatment of confidentiality and access to micro-data.* Demand for access to micro-data (or data about a data provider, including an individual person, household, business or other entity) has been increasing amid the growing recognition of its value for social, economic and business analysis. While the benefits from providing access to microdata may be great, NSOs must also maintain the trust of respondents if they are to continue to cooperate to achieve high response rates to surveys and deliver accurate, high quality statistics. While the precise arrangements for access to micro-data will vary from

country to country, the following guidelines can serve as general underlying principles for statistical disclosure control of micro-data:⁴⁰⁴

- i. It is appropriate for micro-data collected for official statistical purposes to be used for statistical analysis to support research as long as confidentiality is protected.
- ii. Micro-data should only be made available for statistical purposes.
- iii. Provision of micro-data should be consistent with legal and other necessary arrangements that ensure that confidentiality of the released micro-data is protected.
- iv. The procedures for researcher access to micro-data, as well as the uses and users of micro-data, should be transparent and publicly available.

20.25. *Decision-making on granting access.* It is the role of the NSO to decide whether, how and to whom its micro-data are released. This decision may depend on the merits of specific research proposals and the credibility of the researcher; whether the risk of identification is sufficiently small; whether the adjustments made to the data to protect confidentiality have not unduly damaged the micro-data for research purposes; and whether the variables that have been collapsed are the most appropriate. A good practice is to establish an internal committee to debate these matters and make recommendations to the head of the NSO.

20.26. *Legal Arrangements to protect confidentiality.* Legal arrangements (or at a minimum, some form of administrative arrangement) to protect confidentiality should be put in place and made visible before any micro-data are released. Such arrangement should cover what can and cannot be done and for what purposes, the conditions of release and the consequences if these conditions are breached.

20.27. *Transparency.* Transparency is important to increase public confidence that micro-data are being used appropriately and that decisions regarding access are made objectively. The NSO web site is an effective means of ensuring transparency and for providing information on research based on released micro-data.

20.28. *Managing breaches.* The NSO should ensure that researchers are aware of the consequences to them and their institution if there are confidentiality breaches. Legal action could be considered if a legal offence has occurred; but at a minimum, the researcher (and possibly the researcher's institution) should be prevented from further access to micro-data. For minor breaches, a warning may be sufficient.

20.29. *Approaches to the dissemination of micro-data.* There are a number of software products for managing confidentiality that are currently available for micro-data (for

⁴⁰⁴ *Managing Statistical Confidentiality and Micro data Access: Principles and Guidelines of Good Practice* (2007). United Nations Economic Commission for Europe and Conference of European Statisticians. ISBN 13: 987-92-1-116959-1. The electronic version of the guidelines is available at the UNECE Statistical Division's website: <http://www.unece.org/stats/publ.htm>.

example, the Special Uniques Detection Algorithm³ and sdcMicro).⁴⁰⁵ Many NSOs also develop their own tailored processes and software specific to their legislative requirements.⁴⁰⁶ A number of NSOs release public use files, also referred to as Confidentialised Unit Record Files (CURFs), which are heavily confidentialised to remove names, addresses, geographic information and other details, and are often released on a medium such as CD-ROM or through a data archive. Considerable amounts of staff resources and time are required to produce a CURF. Confidentialised licensed files may also be offered on a restricted basis to approved researchers. Micro-data can also be made available via Research Data Centers or Data Laboratories, whether on-site or through virtual terminals installed in other organisations. Outputs removed from these centers must be checked manually.

20.30. Many NSOs are creating more innovative ways in which micro-data are disseminated, including the use of Remote Analysis Servers, which allow researchers to submit a query via the internet to the agency's server which sends confidentialised output back to the researcher.⁴⁰⁷ The advantages of such an approach are that the output is tailored specifically to the type of analysis being undertaken, minimizing information loss and all submitted programs can be logged and audited to identify possible breaches. Some disadvantages may include the fact that the analyst is restricted to use only data transformations and analysis supported by the server and the substantial investment of time and money required to develop the confidentialisation software.

B.4. Users

20.31. *Focusing on user needs.* Major users of the output that a statistical agency disseminates are likely to include key government agencies (including the department responsible for the System of National Accounts and Treasury departments), industry bodies and the media. Amongst such users, high levels of statistical expertise, as well as exacting requirements, are to be expected. Users who have had less exposure to statistical products may not be as sophisticated in their expectations of what can be provided, and may be less expert in their interpretations: such users may well require support, by way of explanatory material of key statistical concepts, for example, and their expectations may need, initially at least, to be more closely managed.

20.32. *Understanding and negotiating users' requirements.* It is essential to bear in mind the wide range of uses to which an agency's statistical output will be put. Trade in Services data are incorporated into the larger balance of payments picture, and that larger picture is, in turn used in Treasury modeling to assess economic performance. Other services data may, for example, be used by Government to assist in the determination or modification of specific trade or industry policies. It is essential an agency negotiate with

⁴⁰⁵ Special Uniques Detection Algorithm is a system for detecting and grading special uniques. This is needed for confidentialising datasets by first identifying all special unique records and either disguising or removing them. SDCMicro is free software for the generation of protected micro-data for researchers and public use, available at: <http://cran.project.org/web/packages/sdcMicro/index.html>.

⁴⁰⁶ Country-specific examples of micro-data procedures as presented at plenary sessions of the Conference of European Statisticians held by the United Nations Economic Commission of Europe (UNECE) are available at: <http://www.unece.org/stats/documents/2013.06.ces.html>.

⁴⁰⁷ More details regarding Remote Analysis Servers can be found in a note by the Australian Bureau of Statistics presented at the Sixty-first plenary session of UNECE/CES, entitled "Innovative micro-data access - confidentiality on the fly" available at: <http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2013/29.pdf>.

its users their requirements in terms of contents, standards, classifications, accuracy, timeliness, output format/s, platform/s for delivery. This would include clarity concerning the unavoidable trade-off between timeliness, accuracy and cost.

20.33. *Negotiating the output.* A statistical agency must align its output, and the way in which it disseminates it, with users' requirements and capabilities. Users' requirements, therefore, need to be clearly understood and negotiated in the context of the ongoing relationship, and the agency needs to ensure that it remains aware of its users' evolving requirements, and in turn keeps them abreast of developments in the agency's output strategies and practices which may impact on them.

20.34. Ideally, users' output requirements would be clearly articulated well before data is to be disseminated as these requirements have significant impact on decisions made throughout the statistical process, including: the scope of the collection, its cost, required levels of accuracy, timeliness, standards, classifications, explanatory material, format of the output, platforms for its delivery, possible or likely limitations imposed by data providers' confidentiality requirements, and the handling of *ad hoc* requests.

20.35. *Monitoring of data dissemination needs of users.* It is a good practice to systematically monitor changing user needs in order to ensure higher relevance of the compiled data. Such monitoring, as well as subsequent actions taken, should be part of interagency cooperation efforts within the established institutional arrangements. It is a good practice to establish close and long-term relationships with representatives of major user groups in order to identify the most effective ways of data and metadata dissemination. This might be done via standing advisory committees as well as via *ad hoc* promotional events.

20.36. *Surveys of user satisfaction regarding data dissemination.* In order to ensure the most effective dissemination it is a good practice to conduct user satisfaction surveys. Such surveys might identify user groups which might be given more attention as they might lack certain technical means of accessing data or might need more detailed explanations with respect of how to use data properly. A well designed user satisfaction survey regarding data dissemination would normally focus on the following aspects of data dissemination: (a) user-friendliness of the trade statistics database interface; (b) clarity and completeness of available metadata; (c) desirability of continuation of traditional paper publications, (d) ways to improve data and metadata presentation.

20.37. *User support to ensure correct interpretation of data.* While statistics can be acceptably used and interpreted in many different ways, it is important to maintain trust in, and the credibility of, official trade statistics. Hence, a good practice by the responsible statistical agency is to prevent obviously erroneous interpretation of the data, and undertake the necessary corrective actions if such faulty interpretations are detected (for instance, conducting press conferences and press releases, and writing letters to the editors publications where misinterpretations have been detected). A good practice to avoid misinterpretation of data is to place special attention to establishing direct contacts with other government agencies, international organizations and universities, as these are users of foreign trade statistics whose analyses have major impact on public policy and public opinion.

20.38. *Raising user awareness.* It is often noticed that users often do familiarize themselves with the available metadata and that additional efforts are required to raise

their awareness. It is a good practice to include explanation of the importance of metadata for correct data interpretation and effective use in all relevant outreach activities. Even if detailed metadata goes unused, the very fact that it is compiled and made available is reassuring for those who wish to see high standards of credibility upheld.

20.39. *Communication, relationship building, relationship management.* At all stages of the production cycle of statistical output a statistical agency should have clearly formulated and documented procedures for communication with users. This should cover content, frequency, media and protocols for ad hoc communication. The communication strategy should include protocols for conducting communication and for the recording and auctioning of such outcomes as arise. The agency should also consider establishing regular fora for structured communication involving key users and stakeholders. These fora are useful mechanisms for developing and strengthening corporate relationships, and agency and user knowledge of each other's capacities and requirements.

20.40. It is a good practice to conduct regular outreach activities aiming to help users to better understand data and put them to the most effective use. These include efforts to improve the statistical literacy of users and to prevent misinterpretation within the context of a broad public relations strategy to deepen the general public's understanding of the importance of statistics. As examples, the following outreach activities can be encouraged: conducting seminars focused on specific user groups; offering tutorials and user guides explaining how to find data on the dissemination website; organizing press conferences and including contact information in press releases to assist users in the correct interpretation of the statistics; participating in annual conferences of user groups, book fairs and other suitable events; launching awareness campaigns, such as a "National Statistics Day/Week/Month".

B.5. Formats and means of dissemination, transmission standards

20.41. *Diversity of formats and means of dissemination.* Both data and metadata can be disseminated in various formats and by various means. In view of diversity of user groups it is a good practice to adopt several formats and means of dissemination to ensure that data and metadata are effectively delivered. For example, press releases of aimed at the general public have to be disseminated in ways that facilitate re-dissemination by mass media, while more comprehensive or detailed statistics intended for researchers need to be disseminated via on-line databases, with hard copy publications used as reference materials.

20.42. *Nature of the data to be published.* The nature of the data to be published will have a significant influence on the data dissemination technology decision. For example, large, detailed datasets might be more appropriately published electronically, which increases the ability of users to examine the suitability of the data to satisfy their information needs. Similarly, an individual dataset with a range of features or audiences may be presented using multiple dissemination methods (e.g., data in a spread-sheet format and the explanatory notes as a PDF file).

20.43. The method of dissemination should also give consideration to the maintenance of links between data and the metadata and explanatory material that supports it, so that clients can understand and use all publically available statistical information. The dissemination of classifications etc. should be via a method which complements the

method adopted for the data. The use of transmission standards to improve consistency and interpretability is recommended.

20.44. *Electronic publication.* Such publication is usually website based where data and metadata could be presented in html format, or as a downloadable document, in pdf or spreadsheet format, for example. Access to the internet therefore becomes a key consideration. Publishing large datasets in a printed publication could be preferable to publishing on the internet where access to the internet is limited or lack of bandwidth would make downloading the data too slow.

20.45. *Dissemination of standard and customized datasets.* Statistical organisations may choose to publish a standard dataset which meets the needs of most users via the most readily accessible technology, and provide more sophisticated data sets via different dissemination methods to users who are willing / able to pay for this service. For example, Trade in Services data may be published at a national level as a PDF file on the statistical organisation website, with more data available for more detailed service types or for more detailed geographic areas as a custom data request supplied to individual clients in spread-sheets directly. Where very large amounts of data are involved, the ability to interrogate the data and create customised datasets could be useful. In this instance, it is worth considering creating interactive tools, such as an online table building facility, with a user friendly interface.

20.46. *Centrality of electronic databases.* This Guide recommends that the official country trade statistics are made available to users through the electronic databases maintained by the responsible agency. It is a good practice to ensure that such databases: (a) allow free and equal access to all users to any data record considered part of official trade statistics; (b) contain an extensive metadata and knowledge base; (c) allows to make queries easily and with a user-friendly interface on the entire database, and to download query results in the commonly used electronic data formats (such as comma delimited text files) thus reducing the need for personalized handling of most data requests and greatly enhancing efficiency of data dissemination.

20.47. *Printed publications* could be produced as well as, or instead of, electronic as it may be easier or preferable for users to access the data this way. Providing printed publications to libraries is also a good way to ensure broad availability of the data. It is a good practice to periodically redesign paper publications in order to make use of the innovative ways of data and metadata presentation and better reflect the user demands. In this connection countries are advised that it is no longer necessary to issue paper publications in an old fashioned way containing a set of tables or providing very detailed data on trade in particular commodity groups and partners. A better practice is to focus such publications on the main features of a country's external trade, presenting data in a more user friendly way by resorting to enhanced visual elements such as color charts and by adding more analytical information.

20.48. *Transmission Standards.* There are a number of processes and mechanisms for the exchange or dissemination of data and metadata between different organisations, and a number of initiatives at the national and international levels are underway which are aimed at improving data and metadata dissemination and exchange efficiency. Bringing together output in a single repository, supported by standard services for loading and extracting content and managing associated metadata is a good way of ensuring consistency and coherence, and can facilitate dissemination to different users with

different needs. The central role in this respect plays *Statistical Data and Metadata eXchange (SDMX)*. Statistical agencies should consider the use of SDMX, in the dissemination of data and its accompanying metadata, to allow for improvements in the publication of data – it becomes more easily possible to process a standard format once the data is obtained, and the data and metadata are linked together, making the comprehension and further processing of the data easier (See Chapter 18 and SDMX website for additional information).

20.49. *Transmission to international organization.* The metadata reporting requirements of the IMF and Eurostat are described in Chapter 18 Section C.

B.6. Country experience: the Russian Federation - disseminating trade in services statistics

20.50. One of the forms in which the Bank of Russia disseminates the data on trade in services is in the Yearbook on “International Trade of the Russian Federation in Services”. The yearbook is published both in Russian and in English, and it is disseminated free of charge. The yearbook is also posted on the Bank of Russia’s official website.

20.51. The Yearbook contains a variety of sections. It starts with a description of definitions and explanations of basic concepts employed in the publication, including a detailed description of certain kinds of services. Those kinds of services whose values are closely linked to other balance of payments components’ values (e.g. freight services are partially included in goods’ values), or for which information cannot be derived directly from data reports (such as FISIM, insurance, and services recorded under the “Travel” item) are described within special boxes inserted in the text.

20.52. Publication of statistical data is accompanied by analytical commentary, including an analysis of the situation in the area of trade in services in the reporting period. The focus is on those types of services that are most important for Russia’s economy (transport, travel, construction), and on the areas of economic activity that have changed most dynamically over the recent years. The text is illustrated with the charts and diagrams.

20.53. Tables with statistical data time series are published for the three most recent years, with updates of the previously disseminated statistics. Each table contains information on turnover, exports, imports, and the balance on international trade in services. The publication includes a range of tables including for example tables with geographical composition and breakdown by detailed services classification, as well as seasonally adjusted time series.

20.54. The concluding section of the Yearbook contains references to and information about data sources and compilation method. This includes amongst others a reference table with data sources by services type; descriptions of major data sources include the name of the statistical reporting form covering transactions, the name of institution responsible for the form’s continuity, periodicity of reporting, sample of respondents; and a list of models used by the Bank of Russia for certain types of services including a brief explanation of the modeling techniques and information sources.

B.7. Revision Policy

20.55. *Features of a good revision policy.* Recognizing that data revisions and dissemination of the revised data are an essential part of country practices, this Guide

encourages countries to develop a revision policy that is well designed, carefully managed, transparent and well-coordinated with other areas of statistics and hence, allows users to cope with revisions in a systematic manner. The following are some good practices in relation to the revision policy:

- i. Availability of a detailed description of the revision policy on the responsible agency's website;
- ii. Reasonable stability of timing of the revisions from year to year;(c) Predetermined timing of revisions (clearly reflected in the data release calendar);
- iii. Prior notification to users whenever a revision requires changes in the time series going as far back as the beginning of the series to retain methodological consistency, explaining the reasons for the revision and providing information on its possible impact on the data;
- iv. Easy access to sufficiently long time series of revised data;
- v. Dissemination of all revised monthly, quarterly and annual data to ensure consistency of all data available to users, including seasonally adjusted data and indices;
- vi. Adequate documentation of revisions in the statistical publications and databases;
- vii. Coordination of revision policy with non-customs data providers which might be the origin of large revisions;
- viii. Establishment of a vintage database to measure the size of revisions and generate quality indicators.

20.56. A revision policy should describe the data required to be revised, the frequency in which data is to be revised, and any reasoning behind revisions. Statistical organisations should have a published, public revisions policy that explains the above in detail.

20.57. Data sources are often continually updated and some data sources are received on a lag, making it necessary to revise data. Any revision has the potential to impact multiple sections/teams, all operating on different time periods and publications, so there needs to be a consistent treatment surrounding the revision process to maintain quality, coherence and usability of data that is published.

20.58. Revision policies should balance accuracy with usability. On one hand, it is desirable to account for each and every possible change in the data as soon as possible. On the other hand, frequent changes to a dataset may make it difficult for users to get a clear picture of the underlying series and makes version control difficult. The policy should be practical to implement, and should itself be revised if necessary.

B.8. Country experience: the Russian Federation - data revision policy

20.59. Russian external trade in services data are revised and updated within the overall framework of the Bank of Russia's Data Revisions Policy and Methodology, in order to

ensures the accuracy and comprehensiveness of external sector statistics and ensure the temporal consistency of time series. The revisions rules applied in practice to external trade in services time series provide for three different kinds of adjustments

- i. **regular revisions:** when published data are updated e.g. in order to replace initial estimates with actual data (in case of time lags)
- ii. **ad hoc revisions:** when new information becomes available on unrecorded large transactions or when changes are made in the compilation methodology
- iii. **technical revisions:** related to the application of the double entry principle in recording the external trade in services transactions within the balance of payments and the need to correct the corresponding double entry, or reflect the change in the source data coverage or other changes.

20.60. Historical data are revised as far as possible in instances of major changes in methodology; however they are not revised in the case of changes to the data collection systems.

20.61. The results of revisions are published. Annually the Bank of Russia prepares a detailed table of revisions including the initial data, revised data and discrepancies, followed by detailed commentary on data revisions. The quarterly publications also contain a detailed list of updated items, periods subject to review, and reasons for the revisions. The latter includes the codes included in table 20.1.

Table 20.1

Codes used for data revisions in Russia

О	changes in the previously reported data
М	improvements of compilation methodology/computation and evaluation methods
НИИ	inclusion of information from new sources on non-residents' transactions
КПП	corrections due to changes in the pairs of the BOP double entry transaction records
ЗОП	replacement of earlier estimates with actual data
П	other miscellaneous changes

Box 20.1

The revision policy of Australia

The Australian Bureau of Statistics (ABS) has published the Australian Economic Statistics Revisions Policy (ASERP). In summary, it states that economic statistics are typically high frequency data that require a trade-off between accuracy and timeliness, and it aims to maximise both these factors. It states that the following principles should be observed:

- As far as possible users should be informed in advance of significant methodological changes which will result in revisions
- Information on revisions, including their reasons, should be kept and published as appropriate
- Revisions should be analysed to determine whether improvements in sources or methods could lead to a future reduction in the extent of revisions

The current ASERP has been presented with challenges. Among these include:

- The complexity and risk imposed on Business Statistical Centres (BSCs) from having to maintain parallel data for six to nine months on systems that are not designed for this.
- Clients agreeing to the introduction of concurrent seasonal adjustment and its regular revisions based to a desire to know the true result sooner. Australia's current policy delays the release of this true (or improved quality) data.
- Increasing reliance on administrative data and not being able to impose our revisions policy on the administrative sources.
- Maintaining internal vs. external coherence for statistical data.

SITS has developed their own revisions policy that is consistent with the AESRP on a broad level (that is, maximising both accuracy and timeliness while taking both into account) but also guides decisions for Business Statistical Centre (BSC) use. In summary, it states that survey revisions may be recorded at any stage but should only be applied after the current survey data has been finalised to ensure consistency across publication cycles particularly during periods of monthly, quarterly and annual releases. Historical revisions should be recorded as soon as they are identified, as they only occur once a year in SITS and may not cover periods where revisions are identified. Any revisions that do not fit the other two criteria may be applied at any stage.

For instance, if there is survey data revised from the previous quarter, the following steps are taken: • Revisions are identified and confirmed, • Revisions are documented, • Revisions are applied in the SITS Processing system through to working spreadsheets, • These files are updated with only the revisions mentioned above and are sent to other areas for further processing

C. Integrated presentation of resident-nonresident trade in services statistics, FATS and other statistics

C.1. Dissemination of trade in services statistics by the 4 modes of supply

20.62. This section deals with the dissemination of trade in services statistics by the 4 modes of supply (BOP and FATS) as described in the table V.2 of MSITS 2010. The allocation of FATS as mode 3 supply of services is straightforward (see chapter 15) whereas the allocation of resident non- resident trade in services statistics is described in detail in chapter 14.c.

20.63. For those countries that have started, as a first step, to compile trade in services by modes only for a very specific sector, these data could be disseminated having in mind that accompanying metadata should be very detailed as the sector under consideration might not be directly comparable with statistics possibly disseminated by other countries on similar services. Each country might indeed choose to compile trade in services by modes of supply on very specific niches taking into account their comparative advantage and the relative importance of the service for their domestic economy. This is for instance the case of Australia (ILSAC in consultation with ABS) and India (Reserve Bank of India) which are respectively collecting legal and computer software and IT services by the 4 modes and by partner country (see chapter 6 F) . A description of the trade in service item

in terms of categories of the Central Product Classification (CPC) could be useful in order to clarify the scope of the service under consideration which is broken down by modes

20.64. Table 20.2 provides an example format for disseminating statistics for a specific service for the 4 modes of supply. This type of statistics is more likely to be compiled on the export side as it is the case for ILSAC and the reserve bank of India. Data could nevertheless be presented both on the export and the import side. Additionally, export data by modes of supply from partner countries might be used to present or to validate import of services in the compiling economy.

Table 20.2

Dissemination of a specific service by the 4 modes of supply.

	FATS sales or output	Balance-of-Payments trade in services		
		Mode(s)		
	Mode 3	Mode 1	Mode 2	Mode 4
Service exports/outward	X			
Services imports/inward	X			

20.65. For countries that have not started compiling trade in services by modes via data collected directly from surveys, a possible alternative for presenting – and disseminating International supply of services by modes would be to perform a “conceptual” allocation of trade in services as presented in chapter 14 C.

20.66. Disseminating supply of services using the table V.2 of MSITS would most probably not be so costly: the compiler just has to decide how a specific service item is most probably supplied by exporters (or to importers) of his economy, starting from the allocation as suggested by table V.2. Nevertheless, very detailed metadata has to be provided explaining the logical-rational allocation of the service items to specific modes. In addition compilers need to keep in mind that the table V.2 of MSITS 2010 is just provided as a guide showing what is the most likelihood of having some transactions be allocated to one mode or the other, or a combination of modes.

20.67. Using the conceptual (or mechanical allocation) would present the advantage of disseminating statistics by modes for the main service categories. Presenting trade in services by modes for the main EBOPS items (plus some supplementary sub items) would facilitate cross country comparisons. A prototype presentation for disseminating services data by modes of supply based on the table V.2 in MSITS 2010 is shown in table 20.2. This may be adapted according to the data availability in the country, as well as on the compiler's knowledge of how services are supplied by or in the country. Trade in services statistics by mode of supply data could be presented both for exports and imports flow for broad service categories and with partner world as shown in table 20.3. Instead of partner world relevant economic or geographical zones or regions could be presented and would give probably more insight views for policy decisions. The columns on the right hand side providing the possibility of presenting information for a combination of modes should only be used if it is not possible to have a clear distinction between modes in the services transactions. The aim would be to have all transactions shown under respective single modes, and therefore removing the "combined" columns.

20.68. As long as FATS data are provided only on an activity basis, it will most probably not be possible to break down sales or output by product using EBOPS 2010 as suggested in MSITS2010408 Sales or output of services, broken down by activity using ICFA rev,1 could be disseminated as an independent table following the model proposed in MSITS 2010 (table IV.1), and FATS information can be ignored in table 20.4 as it is the case currently in the summary tables prepared by New Zealand which present aggregate trade in service by mode 1, mode 2 and mode 4 and partner country.

20.69. Such a format could also be used by those actually collecting and compiling trade in services data by modes of supply (see New Zealand example below).

20.70. Table 20.3 displays an example on how trade in a specific service could be disseminated broken down by mode and partner country (or main trading partners). The partner dimension is an important dimension in the context of trade in services by modes also. It is key in trade negotiations and could provide statistical background for settling disputes, better evaluating market opportunities and monitoring changes in patterns of trade in services exports (and imports). Again this table could be prepared both for supply of services in the compiling economy and abroad.

Table 20.3
Dissemination of BOP trade in services and FATS data by partner country

Service XXX	FATS sales or output	Balance-of-payments trade in services		
		Mode 1	Mode 2	Mode 4
	Mode 3			
Partner country A	..	..	..	..
Partner country B	..	..	..	..
Partner country C	..	..	..	..

C.2. Country experience: New Zealand - disseminating trade in services by mode of supply by broad service types and by partner

20.71. New Zealand disseminates via its website two tables presenting services exports by modes of supply for main services items and for main partners. Mode 3 is out of the scope of the BOP survey which is used to collect the information on trade in services by mode so only modes 1, 2 and 4 are presented in two tables. Table 20.4 presents exports of services by mode of supply and broad type of services and is provided below.

⁴⁰⁸ It is important to keep in mind that MSITS 2010 suggests as a long-term goal to develop statistics on sales/output of services by product, using EBOPS if possible.

Table 20.4

New Zealand exports of services by mode of supply and broad type of services

Year ended 30 June 2011			
NZ\$(million)			
Broad service type	Mode of supply ⁽¹⁾		
	Cross-border supply ⁽²⁾	Presence of natural persons ⁽³⁾	Consumption abroad ⁽⁴⁾
Information and communication technology services	642	69	14
Financial services	189	2	1
Trade and sales services	551	34	20
Business services	831	66	25
Technical and professional services	343	137	9
Intellectual property	469	...	...
Miscellaneous services	136	84	12
Entertainment and recreational services	219	71	24
Services not elsew here classified	43	--	1
Total	3,424	463	105
1. Data may not add to stated totals due to rounding.			
2. Cross border supply is w hen the work is performed in New Zealand and delivered to a customer overseas (eg by Internet, phone, or mail).			
3. Presence of natural persons means the work is performed by a New Zealand employee working in a foreign country.			
4. Consumption abroad is w hen the customer travels to New Zealand to take delivery of the service.			
Symbols:			
...	not applicable		
--	amount too small to be expressed		
Source: Statistics New Zealand			

20.72. Countries in the position to break down the FATS sales values between goods and services –like the U.S. Bureau of Economic Analysis (US BEA) which dissemination practice is described below - could present some data on sales in services values side by side with the services trade data to compare the relative sizes of modes 3 (FATS sales) and the other 3 modes of services supply and also to present the whole services trade in a country. Then data on FATS and trade in services could be presented in more detail in the same report but in different tables.

20.73. Modes of supply statistics could possibly be disseminated on an annual or pluri-annual basis as (i) FATS data are more likely to be collected yearly and (ii) data on modes may not be collected every year. The U.S. BEA releases cross border trade in private services and services supplied through direct investment enterprises or affiliates on an annual basis. This is also the case for ILSAC in Australia, or RBI for computer and other IT enabled services, which produce international legal trade statistics for the four modes of supply on an annual basis. However other countries, such as New Zealand's example, may show that it is more relevant to present data on a less regular basis (for New Zealand at the time of writing the plan is to publish modes of supply data each time the results of the benchmark census are presented, that is every 3 years).

C.3. Quality criteria for dissemination trade in services data by modes

20.74. The quality criteria as described in chapter 20 would apply for the dissemination of modes of supply data. For instance Modes of supply data need to be

- i. Relevant, i.e. produced for services items that are important for the compiling economy. Preferably they should be developed in cooperation with the users of modes data such as the ministry of trade, the ministry of economy or the ministry of foreign affairs. The relevant services could be identified through the relative share on exports/imports of services;
- ii. They should also be timely, possibly produced as least on an annual basis as mentioned above, and following a predefined calendar;
- iii. They should be accurate, portraying reality reliably. This means that consultation with stake holders should ideally take place on a regular basis;
- iv. They should be coherent, overtime, and comparable between regions and partners. In case a country is focusing on a particular type of services, a description in terms of CPC of the service would be useful;
- v. Accessibility and clarity should be ensured: Statistics of trade in services by mode should be presented in a clear and understandable form, disseminated in a suitable and convenient manner, with supporting metadata and Guidance;
- vi. Cost effectiveness is also an important dimension, and here the mechanical allocation presents a strong advantage as this method for allocating EBOPS items by mode is relatively inexpensive. Existing data transmission mechanism and IT-tool should be used to the much as possible extent.

C.4. Country experience: the United States - combining trade in services and FATS Statistics

20.75 Combining statistics on the two major channels of delivery— resident/non-resident transactions in services and FATS—gives users a broad perspective on the international supply of services. This broad perspective recognizes the key role in the delivery of services internationally played by affiliates that are located in—but are owned outside—the markets they serve. It is also consistent with the view many firms take of their world-wide operations.

20.76 In the United States, the U.S. Bureau of Economic Analysis (BEA) releases statistics on international sales and purchases of private services on an annual basis.⁴⁰⁹ These statistics cover resident/non-resident transactions in private services and services supplied through locally established direct investment enterprises, or affiliates, which are obtained from BEA's FATS statistics.⁴¹⁰

⁴⁰⁹ These statistics can be accessed on BEA's website, www.bea.gov, by looking under "International" and clicking on "International Services."

⁴¹⁰ Cross-border trade in private services excludes transactions by the U.S. government (including the military). Trade in private services is featured in the statistics on international sales and purchases of services because they are most comparable to the services supplied through affiliates, which cover activities of businesses.

20.77 The statistics on resident/non-resident transactions in private services included in the international services statistics are consistent with the statistics on U.S. trade in services that BEA disseminates via monthly, quarterly, and annual releases. The monthly release provides global aggregates of trade for selected types of private services. The quarterly release provides detail for more types of services and for selected partner countries and regions while the annual release provides the greatest detail by type of service and by partner country or region. The statistics on services supplied through affiliates included in the international services statistics are derived from BEA's statistics on FATS. Separate releases for inward and outward FATS provide detail by country and industry for all of the data items that BEA collects.

20.78 In the presentation on international purchases and sales of services, resident/non-resident transactions of exports and imports represent trade in the conventional sense and cover transactions between residents of the United States and residents of foreign countries. They include both transactions between unaffiliated parties and trade within multinational companies (intrafirm trade). These estimates are included in BEA's balance of payments accounts. Most of the data used to produce these estimates are derived from BEA surveys.

20.79 Services supplied through affiliates represent services sold through the channel of direct investment. The data on services supplied through affiliates cover majority-owned affiliates and are derived from benchmark and annual surveys of direct investment. The estimates include services supplied to foreign residents through the foreign affiliates of U.S. multinational companies and services supplied to U.S. residents through the U.S. affiliates of foreign multinational companies. These transactions are not considered U.S. international transactions because, under the residency principle of balance-of-payments accounting, affiliates of multinational companies are regarded as residents of the countries where they are located rather than of the countries of their owners. Thus, services supplied abroad by the foreign affiliates of U.S. multinational companies are transactions between foreign residents, and services supplied in the United States by the U.S. affiliates of foreign multinational companies are transactions between U.S. residents.⁴¹¹

20.80 The measures of services supplied are based on data that require affiliates' sales or gross operating revenues to be distributed among sales of goods, sales of services, and investment income. For purposes of distributing sales into goods, services, and investment income, "goods" are generally defined to be economic outputs that are tangible and "services" are outputs that are intangible. Information on investment income was collected primarily to ensure that, if income was included in total sales or gross operating revenues, it would not be included in sales of services.

20.81 For most industries, the measure of services supplied is equal to the reported value of sales of services. However, for three important service industry groups—insurance, banking, and wholesale and retail trade—the services supplied measure recognizes that sales are not closely related to the value of services provided. Supplemental information collected on BEA's surveys of direct investment as well as information from public sources is used to adjust the reported data on sales of services to produce statistics on services supplied for affiliates in these industries.

⁴¹¹ Data are collected on affiliates' sales of services to all destinations, but the estimates of international services focus on sales abroad by foreign affiliates of U.S. companies and sales in the United States by U.S. affiliates of foreign companies—that is, on the sales that are not included in U.S. cross-border exports or imports.

20.82 For banks, services supplied include explicit fees and commissions and an estimate of the value of implicit services provided by banks by offering lower interest rates on deposits than they charge on loans (often referred to as financial intermediation services indirectly measured). For insurance, services supplied consists of BEA's estimate of premiums remaining after provision for expected, or "normal" losses and a measure of premium supplements, which represent the investment income earned on funds insurers hold on policymakers' behalf. For wholesalers and retailers, the measure of services supplied includes an estimate of the value of distributive services provided by selling, or arranging for the sales, of goods.

20.83 In 2012, U.S. exports of private services were \$628.1 billion, and U.S. imports of private services were \$414.7 billion (table 20.5). In 2011, the most recent year for which data are available, services supplied through the majority-owned foreign affiliates of U.S. MNCs were \$1,280.7 billion, and services supplied through the majority-owned U.S. affiliates of foreign MNCs were \$754.0 billion. There are differences in coverage that make comparisons of services supplied through affiliates to resident/non-resident transactions imprecise.⁴¹² However, the large gap between resident/non-resident transactions and services supplied through affiliates indicates the importance of services supplied through affiliates as a channel through which companies sell services to foreign markets. This could be due to the fact that selling through locally established affiliates is the only practical method of delivery for many types of services because of the need for proximity in both time and space between the consumer and producer. In addition to coverage differences, precise comparisons of the relative size of the two modes of delivery cannot be made for specific types of services because the data on cross-border trade are classified by type of service, whereas the data on sales of services through affiliates are classified by the primary industry of the affiliate.

Table 20.5
Services Supplied to Foreign and U.S. Markets Through Cross-Border Trade and Through Affiliates

	To foreign markets		To U.S. market	
	Through cross-border trade (U.S. exports)	Through foreign affiliates of U.S. companies ¹	Through cross-border trade (U.S. imports)	Through U.S. affiliates of foreign companies
	Billions of dollars			
1986	77.5	60.5	64.7	nag.
1987	87.0	72.3	73.9	62.6
1988	101.0	83.8	81.0	73.2
1989	117.9	99.2	85.3	94.2
1990	137.2	121.3	98.2	109.2
1991	152.4	131.6	99.9	119.5
1992	164.0	140.6	103.5	128.0
1993	171.6	142.6	109.4	134.7
1994	186.7	159.1	120.3	145.4

⁴¹² An example of a difference in coverage is the inclusion of distributive services in the measure of services supplied through affiliates but not in the cross-border trade statistics. The distributive services associated with importing and exporting goods are included indistinguishably in the value of trade in goods.

1995	203.7	190.1	128.7	149.7
1996	222.1	223.2	138.8	168.4
1997	238.5	255.3	151.5	(²) 223.1
1998	244.4	286.1	165.6	245.5
1999	262.9	(³) 353.2	181.0	293.5
2000	281.2	413.5	203.9	344.4
2001	270.8	421.7	201.0	367.6
2002	278.2	423.5	206.4	367.6
2003	287.6	452.5	218.8	374.1
2004	332.1	(⁴) 684.9	254.0	(⁴) 540.9
2005	363.4	795.6	272.9	571.2
2006	404.5	889.8	307.6	648.3
2007	470.3	1,019.2	337.3	683.8
2008	516.3	1,116.9	372.5	701.6
2009	490.5	1,071.6	350.4	669.3
2010	538.6	1,155.2	372.9	701.2
2011	595.7	1,287.0	398.4	754.0
2012	628.1	n.a.	414.7	n.a.
Percent change from the preceding year				
1987	12.3	19.5	14.2	.....
1988	16.1	15.9	9.5	17.0
1989	16.7	18.4	5.3	28.7
1990	16.4	22.2	15.1	15.9
1991	11.1	8.5	1.8	9.5
1992	7.6	6.8	3.5	7.1
1993	4.6	1.5	5.8	5.3
1994	8.8	11.6	9.9	8.0
1995	9.1	19.4	7.0	2.9
1996	9.0	17.4	7.8	12.5
1997	7.4	14.4	9.1	(²)
1998	2.5	12.0	9.4	10.1
1999	7.6	(³)	9.2	19.6
2000	7.0	17.1	12.7	17.3
2001	-3.7	2.0	-1.4	6.7
2002	2.7	0.4	2.7	(*)
2003	3.4	6.8	6.0	1.8
2004	15.5	(⁴)	16.1	(⁴)
2005	9.4	16.2	7.5	5.6
2006	11.3	11.8	12.7	13.5
2007	16.3	14.5	9.6	5.5
2008	9.8	9.6	10.4	2.6
2009	-5.0	-4.1	-5.9	-4.6
2010	9.8	7.8	6.4	4.8
2011	10.6	11.4	6.8	7.5
2012	5.4	n.a.	4.1	n.a.

n.a. Not available

* A non-zero value between -0.05 and 0.05 percent.

1. For 1986-88, the statistics, for the purposes of this presentation, have been adjusted to be consistent with those for 1989 forward, which reflect definitional and methodological improvements made in the 1989 Benchmark Survey of U.S. Direct Investment Abroad to exclude investment income from sales of services by affiliates in finance and insurance.

2. Beginning in 1997, sales by U.S. affiliates were classified as goods or services based on industry codes derived from the North American Industry Classification System (NAICS); the statistics for prior years were based on codes derived from the 1987 Standard Industrial Classification (SIC) System. This change resulted in a redefinition of sales of services by affiliates and a net shift of sales from goods to services. See SURVEY 79 (October 1999): 61.

3. Beginning in 1999, sales by foreign affiliates were classified as goods or services based on industry codes derived from NAICS rather than the SIC system, which resulted in a redefinition of sales of services and a net shift of sales from goods to services. See SURVEY 81 (November 2001): 58.

4. Beginning in 2004, services provided by bank affiliates and by the nonbank affiliates of U.S. banks are included in the statistics. Also beginning in 2004, the statistics are presented as "services supplied" rather than "sales of services." Compared with sales of services, services supplied adds 1) wholesalers' and retailers' distributive services, 2) insurers' premium supplements, and 3) banks' implicitly-charged services; it subtracts a proxy measure of insurers' expected losses. For more information, see SURVEY 89 (October 2009): 37.

Note. The statistics on cross-border trade for 2003-2011 and services supplied through affiliates for 2010 are revised from those released in October 2012.

20.84 The IMF's General Data Dissemination System and Special Data Dissemination Standard specify the public dissemination schedule of release of data in the form of a release calendar. This release calendar provides prior notice of the release dates on which the statistical agency will release its key economic indicators to the public.

D. Combined presentation of international merchandise and services trade statistics

20.85 The presentation of an integrated set of statistics is recommended by the UN Statistical Commission as such will benefit the users, in creating a better understanding of the disseminated statistics and reinforcing messages for evidence-based policy and decision making.⁴¹³

20.86 *The need for combined presentation of trade data.* Users expect that trade statistics covers trade in both goods and services and are presented to them as a coherent data set. Such presentation of trade data is essential for enabling users to answer such questions as what kinds of goods and services are traded between country A and B, or what sectors of the economy are leading exporters of specific categories of goods or services or which ones are their importers.

20.87 *Need for appropriate metadata and guidance for interpreting combined trade data.* To meet this user expectation it is a good practice that SITS compilers, in addition to making SITS available in their own right, closely cooperate with compilers of IMTS in order to develop a policy of presenting (some) data on trade in services and merchandise trade alongside each other accompanied with appropriate explanation of their scope including

⁴¹³ Guidelines, paragraph 5.115.

conceptual overlaps and numerical assessments of such overlaps. It is good practice to provide guidance, including examples, on how data can (and cannot) be used.

D.1. Country experience: Germany

20.88 In 2011 the Deutsche Bundesbank and German Statistical Federal Office decided to present merchandise trade data combined with trade in service data in a collaborative publication for interested users on a yearly basis. It was published for the first time in 2012 on the websites of both institutions and is available only in an electronic version.

20.89 It contains annual data from 2009 on of cross-border merchandise trade from Foreign Trade Statistics (FTS) broken down into main industrial groupings, selected economic activities and country groups (see excerpt below). Due to the methodological differences between FTS (movement across the border) and Balance of Payments concepts (change of ownership) the publication also provides some basic information about the total corrections made to reconcile merchandise trade with the goods account on a Balance of Payments Basis.⁴¹⁴

20.90 Trade in service is broken down by major service items like Travel, Transport, Construction or Financial services and by country groups already used for merchandise trade. To highlight the relevance of the aggregates for the economy the publication further contains a table with relations of exports and imports of merchandise and services to GDP.

20.91 The publication provides users for the first time a complete picture about the German trade with the Rest of the World in a coherent way. However, the current version is quite condensed and so we have to wait if users request further details in the future. As mentioned before, the publication will be updated on regular basis at the end of year following the reporting period (t-1).⁴¹⁵

⁴¹⁴ For further details about the necessary adjustments, see Table 10.2, page 161, in the BPM6.

⁴¹⁵ An English version of the publication is currently not available. The German version can be found under: http://www.bundesbank.de/Redaktion/DE/Pressemitteilungen/BBK/2012/2012_12_07_ausfuehren_waren.html.

Table 20.6
Germany's combined presentation of international merchandise and services trade statistics

Excerpt of Germany's services and trade

Position	Time	2009	2010	2011
Exports of goods and services				
Foreign trade, exports (fob)		803 312	951 959	1 061 225
Main industrial groupings				
Agricultural goods		7 622	8 392	9 488
Intermediate goods		250 757	307 178	342 546
Capital goods		343 521	414 026	466 803
Consumer goods		145 666	157 815	169 621
Consumer durable		23 694	26 097	27 979
Consumer non-durable		121 972	131 718	141 642
Energy		15 733	17 987	23 568
Goods, not allocated		40 013	46 561	49 200
Selected economic activities				
Chemical/pharmaceutical prod.		123 225	142 357	153 179
Machinery		124 595	141 803	163 024
Metal products		67 172	82 744	97 930
IT, electr./optical products, electr. equipment		117 267	143 164	152 443
Cars and auto parts		122 925	160 975	185 510
Supplementary items of exports, net		+ 35 679	+ 52 534	+ 65 682
Export additions		52 219	69 559	84 315
Export deductions		16 540	17 024	18 634
General merchandise, exports (fob) incl. supplements		838 991	1 004 494	1 126 907
Service receipts (based on imports (fob))		172 222	186 892	196 996
Travel		24 842	26 159	27 923
Transport		37 346	43 856	44 111
Merchanting revenue (net)		+ 11 125	+ 14 425	+ 18 702
Insurance services		3 814	4 422	4 408
Financial services		9 387	9 678	10 800
Other services, total		85 708	88 352	91 052
Technological services		41 720	44 022	45 875
Patents and licences		12 903	11 235	10 660
Research and development		8 598	10 039	11 112
Computer services		10 887	12 892	14 011
Engineering and other technical services		9 332	9 857	10 092
Construction		9 837	9 159	9 144
Overhead expenses		2 875	2 299	2 487

Chapter 21 Use of Information and Communication Technology

21.1. *Scope.* This chapter provides an overview of the ways in which information and communication technology (ICT) can be used at the data collection stage (section A), and during the data compilation and dissemination stages (section B). The topics covered include computer assisted personal interviewing, internet data collection, and data and metadata warehousing.

A. Use of ICT at the data collection stage

21.2. Electronic collections present new challenges and opportunities in order to improve editing tasks. They offer the possibility of using built-in edits in electronic questionnaires previously not possible in paper or other modes of data collection. This topic covers all issues relating to methods or strategies about editing of data acquired through electronic data collection (CAPI, CATI, CAWI, etc.) and the way the respondents can carry out editing when using electronic questionnaires. Other related topics may include comparisons of editing practices between electronic collections and other collection modes, as well as different problems using multimode data collections. Measuring the respondent burden and the quality and reliability of the responses in order to provide valuable information to other survey processes is another issue of interest. Papers describing editing strategies to improve relationship with respondents or the general editing process are also welcome.

21.3. Several advantages could be expected from using electronic questionnaires. These include improving accuracy and timeliness, and reducing survey cost and enterprise burden. Improving accuracy results from built-in edits, which allow the respondents to avoid errors at the moment they are made. The elimination of data keying at the statistical agency directly gets rid of a common source of error. Some electronic devices (automatic data fills and calculations, automatic skipping of no applicable questions, etc.) could help the respondent to fill in the questionnaire easier and faster. On the other hand, survey respondents may misinterpret the questions they are asked, potentially undermining the accuracy of their answers. One way to reduce this risk is to make definitions of key question concepts available to the respondents. Although an improvement on data quality could be expected from electronic questionnaires, it is very difficult to measure the real impact on accuracy, given the self-selective nature of the respondents that choose the electronic option. Another accuracy problem is the introduction of a certain bias (people without Internet access will never be able to participate, elderly and low educated will be under-represented).

21.4. There are a lot of expectations about the role of electronic questionnaires. Nevertheless, until recently, the implementation of Web surveys and other EDR methods in enterprise surveys (and, even more, in household surveys) has often been lower than expected. Encouraging the use of Web questionnaires by respondents is a key issue. Several methods can be used. For example, explaining the benefits to the respondents or considering statistical Web questionnaires in a wider context of all administrative duties and all electronic data reporting (ecommerce, e-administration, etc.). Giving incentives (temporary access to information, free deliveries of tailored data) is another method to increase the take-up of Web questionnaires.

A.1. Computer Assisted Personal Interviewing (CAPI)

21.5. Computer Assisted Interviewing (CAPI) is a computer assisted data collection method for replacing paper-and-pen methods of survey data collection and usually conducted

at the home or business of the respondent using a portable personal computer such as a notebook. As the technology advances to provide lighter computers with longer battery life and user friendly software, CAPI will be used more often, especially for quick turnaround surveys.

A.2. *Internet Data collection (IDC)*

21.6. Internet Data Collection (IDC) is a means of quick survey data collection by utilizing the Internet. Respondents fill in their returns using browser based Internet forms. A system administrator subsequently retrieves the completed forms and routes them for further processing. If there are other modes of data capture, the system administrator will consolidate the returns submitted via Internet with those obtained by the other modes.

A.3. *Countries experience: Germany*

21.7. *Electronic data collection using a “statistics reporting portal”*. As in other countries, the former principle to collect data about services exclusively using paper forms was replaced in the last two decades by offering respondents certain possibilities to transmit the requested information by electronic means, e.g. an Excel sheet which can be uploaded via the so called extranet infrastructure of the Bundesbank⁴¹⁶ or submission of electronic reports in Edifact or later in xml- format.

21.8. The reaction of the reporting community on these offers was very positive with the consequence that the share of reports transmitted electronically increased from year to year. Although in the beginning the target was to motivate notably “big players” (representing a high share of the overall reported credits and debits) to use the electronic means, in the last years the focus shifted to less relevant reporters (small and medium enterprises). The main reason behind was the awareness that only a complete electronic data collection enable the Deutsche Bundesbank to raise further efficiency gains in the following stages of the BOP production chain (editing, aggregation etc.) and to reduce the reporting burden as much as possible for the respondents.

21.9. Consequently the Deutsche Bundesbank decided in the year 2007 to develop a tool that should allow all respondents to transmit their data on international transaction and positions without paper securely to the Bundesbank. The cost free statistical reporting portal was implemented in 2009 and enables now the reporting enterprises to create and submit the relevant data electronically.

21.10. The reporting data can either be entered manually or imported into the reporting portal from another data source in a prescribed format. In addition, the reporting portal contains a range of help functions and plausibility checks to make creating a report easier e.g. when entering data, drop-down lists show the selection options available. In addition to entering data manually and using default entries, also the import of the necessary data in CSV format via an interface is possible. The data will be automatically checked and any errors are identified. It is a multi-client system, meaning that it can be used also by third-party submitters, such as a lawyer’s office, to create reports for several parties required to report.

⁴¹⁶ For more details see: <http://www.bundesbank.de/Navigation/EN/Service/Extranet/extranet.html>.

21.11. In our view the main advantage of the portal - beside the high level of security, the data entry assistance (plausibility checks etc.) and the integrated interface to upload large files - is the possibility to receive the data earlier and in a better quality from the reporting parties compared to paper or other electronic means.

21.12. At the current stage the Bundesbank received more than 86 % of the referred transaction volume electronically. This high proportion of electronic reports encouraged us to change our legal requirements and oblige all respondents to transmit the requested information solely by electronic means from September 2013 on.

A.4. Country experience: the United States

21.13. The Bureau of Economic Analysis (BEA), an agency of the U.S. Department of Commerce, started collecting international investment data via the Automated Survey Transmission and Retrieval (ASTAR) system in the year 2000. Subsequently, the system was also used in connection with surveys of trade in services. One of the key features of the ASTAR system is its ability to allow respondents to work at their own pace until the data are ready for submission. The system also incorporates data export and import capabilities for integration with other software such as spreadsheets, as well as encryption capabilities that safeguard the confidentiality of the reported data. In 2005, BEA began researching electronic filing alternatives as a response to the changing technology, and selected Adobe e-forms as the basis of its second generation electronic survey data collection program, called eFile.

21.14. One of the main benefits of the eFile system is the lower cost of maintenance when compared with ASTAR. The eFile system is supported and maintained in-house and not by contractors. More specifically, BEA can build the fillable PDF forms in-house (using the PDFs supplied by the Census Bureau), whereas ASTAR must be supported by contractors.

21.15. Another key benefit and feature of eFile is the password “portal” site. This password portal site for eFile users allows respondents to manage their own passwords, whereas for the ASTAR system, the respondents must contact BEA at the beginning of each reporting cycle to receive period-specific passwords. The ease of eFile password management reduces BEA’s burden of password maintenance and may also encourage more respondents to use the eFile system.

21.16. The eFile system has the potential to collect more accurate data, as fillable PDF forms allow more flexibility in validity and form-specific logic checks than ASTAR. Additionally, BEA can better ensure data security as respondents save and submit their encrypted data on the BEA website. Lastly, eFile users receive confirmation of their submissions almost instantaneously, whereas ASTAR respondents receive confirmation only after the data have been loaded into BEA’s internal database.

21.17. BEA is committed to providing timely and accurate economic accounts data in a cost effective manner. Over the next 18 to 24 months, BEA will phase out ASTAR and convert to eFile for all of its surveys. BEA also plans to develop an XML-based import and export feature that would allow respondents to import their data directly into eFile without the need to enter data manually. As the usage of eFile spreads to all BEA surveys, new challenges undoubtedly will be identified. The survey managers and IT specialists at BEA are committed to work together to improve and augment the system.

B. Use of ICT at data compilation and dissemination stages

21.18. *Data and metadata warehousing* contributes to the integration of economic statistics. With well-designed data warehouses, the dissemination of data and metadata becomes integrated with the collection and processing components of the statistical production process. To support the integration of economic statistics, an output data warehouse should establish a simple and efficient process for accessing data to provide:

- i. comprehensive metadata to facilitate understanding and analysis;
- ii. consistent and coherent long-term time series;
- iii. reliable information about the availability of data;
- iv. information about the availability of updated versions of published series;
- v. contact details for the people who can provide more information about a statistical output.

21.19. Statistical agencies have traditionally developed a separate database for each statistical output. While this simplifies development processes, this practice can be a hindrance to integration of statistics, especially if there is no effort to standardize variable definitions, labels and formats. As better IT tools have become available, many statistical agencies are moving towards the development and population of output data warehouses. The data warehouse approach to the storage of statistical data has many advantages, including:

- i. Efficient search capability;
- ii. Consistency in terminology and definition of variables;
- iii. Standardized statistical methodologies;
- iv. Easier access with common tools and processes;
- v. Increased coherence through standard classifications and definitions;
- vi. Relevant metadata available in a standard consistent format;
- vii. Easier data integration.

21.20. *XBRL reporting*. XBRL (Extensible Business Reporting Language) is an XML-based computer language developed for the electronic transmission of business and financial reports. Some regulatory agencies have established processes for businesses to fulfil their mandatory reporting requirements using XBRL standards. XBRL tools have also been developed for reporting of financial information to taxation and statistical agencies. These tools reduce the cost of compliance for business by building reporting requirements into standard accounting software packages in a way that automates the process of reporting to government agencies.

21.21. The core methodology is an XBRL taxonomy that defines all the data items that the relevant agencies require from business. An essential step in developing taxonomy is harmonising the data items collected by different government agencies. If two agencies require the same definition of a data item, it is given the same name. If the different agencies establish that they need different definitions, then they are specified with different names. This harmonisation process simplifies reporting by businesses by standardising definitions, but it also assists with integration of statistics, because different collection agencies have consistent and coherent data definitions.