11th Meeting of the Advisory Expert Group on National Accounts,
3-5 December 2017, New York, USA

Agenda item: 3.2

ECE Task Force on exchange and sharing of economic data

Introduction

Sharing and reusing data is paramount for improving quality and developing more efficient ways to produce statistics. The increasingly globalized world has forced official statisticians to look for solutions for national and international exchange of economic data. To advance the work in the area of data exchange, the Conference of European Statisticians (CES) established a Task Force under the CES Steering Group on National Accounts. The Task Force has a mandate for three years, until June 2020, after which it will submit a final report. This session will review the objectives and progress of the UNECE Task Force on the exchange and sharing of economic data. The attached paper shares the first findings of the Task Force's work and raises issues for discussion at the AEG relating to advancing national and international data exchange to ensure the high-quality of macroeconomic accounts.

Documentation

A paper on: Exchange and sharing of economic data

Main issues to be discussed

The AEG is requested to:

- Discuss points raised in section V.

EXCHANGE AND SHARING OF ECONOMIC DATA

I. BACKGROUND

The paper describes the objectives and progress of the UNECE Task Force on the exchange and sharing of economic data. The paper shares the first findings of the Task Force's work and raises issues for discussion at the AEG relating to advancing national and international data exchange to ensure the high-quality of macroeconomic accounts.

Many statistical offices are considering the possibilities for more effective exchange of data, especially on the large and complex multinational enterprises (MNEs). New data exchange mechanisms are needed, nationally and internationally, to enhance the quality, coherence and relevance of economic statistics and the efficiency of their production. Without a full picture of MNEs' activities it is a challenge to ensure continued meaningful and correct measurement of global production and trade, and to understand the influence of MNEs on macro-economic and business statistics. There is an urgent need to analyse the risks and obstacles of data exchange and identify enablers that will lead to an increase in the sharing of economic data (including information on business structures) in statistical production.

The *Guide to Measuring Global Production*[1] identifies as a priority the need to develop new methods and sources for collecting and compiling statistics on the largest and most complex MNEs in a consistent and effective way. The Guide also notes the limits of national and international data sharing among producers of official statistics due to legal and confidentiality constraints, which in many cases seem to hamper the possibilities to improve the analysis of MNEs.

The 2015 and 2016 meetings of the joint UNECE/Eurostat/OECD Group of Experts on National Accounts recognized that data exchange is essential when looking for solutions to the challenges related to global production, and asked international organizations to consider ways to facilitate exchange and sharing of economic data. Countries emphasized the need for data confrontation and exchange between the producers of economic statistics within a country and between countries to enable proper data validation and improve quality, relevance and consistency of data across domains. Globalization requires agencies to understand the significance of counterparty information to view both sides of the transaction. National circumstances, legal and technological challenges will need to be considered as well as possible risks, for example related to production processes of statistics, trust of respondents and the general public, and privacy issues.

In view of these developments, the Bureau of the Conference of European Statisticians (CES) decided to undertake an in-depth review of the exchange and sharing of economic data. The review was carried out in October 2016, based on a paper by Statistics Finland with inputs from a number of countries and organizations. The paper identified issues and problems and made recommendations on possible follow-up in areas where progress is achievable, including the need to develop coordination mechanisms, exchange experience, develop general guidance and principles for data exchange, and develop technological tools for this purpose.

[1] https://www.unece.org/fileadmin/DAM/stats/publications/2015/Guide_to_Measuring_Global_Production__2015_.pdf

As an outcome of the review, the Bureau emphasized that national and international data exchange is a prerequisite for statisticians to be able to depict economic reality, profile multinational enterprises and provide meaningful data on their activities. The Bureau stressed the urgent need to operationalize the exchange of data between national statistical offices (NSOs), and asked a group of countries and organizations to identify key streams and priorities and develop terms of reference for a task force for further work in this area.

II. CONCLUSIONS OF THE IN-DEPTH REVIEW OF THE EXCHANGE AND SHARING OF ECONOMIC DATA

The in-depth review investigated the data sharing in the production of official statistics. It provided an overview of existing practices both at national and international level. The review was largely based on a survey of country experiences which was carried out in all CES member countries. In total, 48 statistical offices replied to the survey. The review also provided a brief overview of ongoing activities of international organizations involved in activities related to (or supporting) data sharing and introduced examples and current practices in different types of data reuse and sharing in selected countries.

The survey covered the following main areas: the current scope of economic data exchange nationally and internationally; organizational aspects of data sharing; benefits and challenges experienced; possible international activities in support of national capacity development and other comments by countries. Following paragraphs reflect on the main findings and briefly list the benefits and difficulties as well as capacity development needs.

All offices indicated carrying out some form of *data exchange at the national level*, the most common one was to receive or share aggregated data with other producers of statistics. This takes place in over 80 per cent of responding offices. For micro-data exchange, almost 80 per cent of offices receive data from other producers of statistics and three out of four offices receive micro-data from administrative sources. The counterparts from which administrative data were received were mainly central banks, ministries, customs offices and tax administrations.

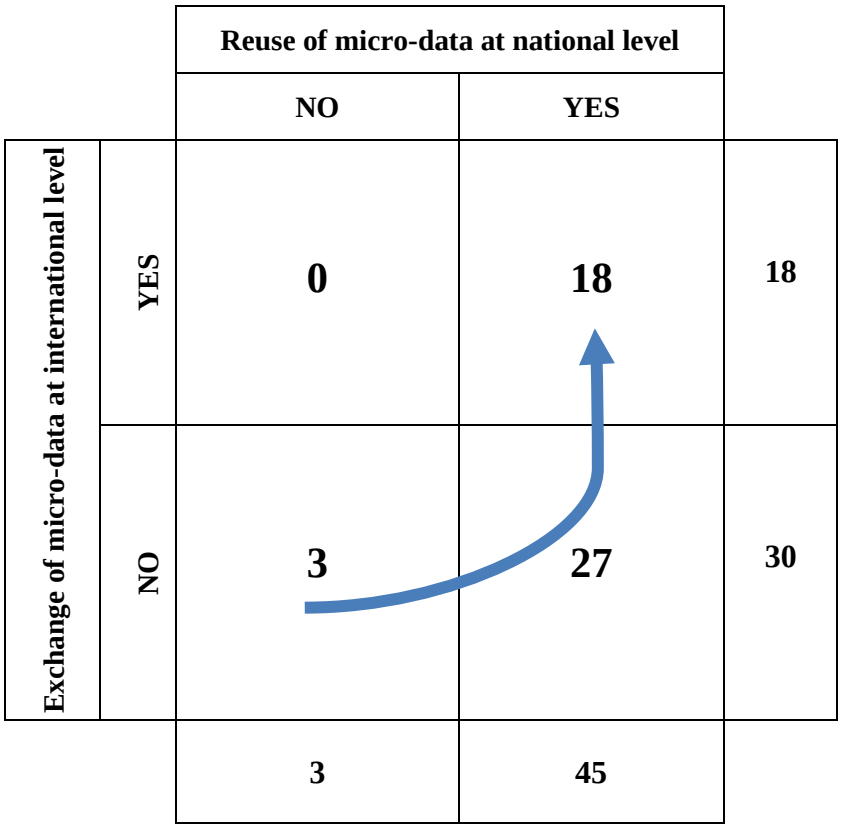
Half of the respondents receive micro-data from commercial sources, over half - not only receive, but also provide micro-data to other producers of statistics and over two thirds provide micro-data for other purposes than statistical, typically for research.

Over 90 per cent of offices engage in *international data exchange*. Typically, in more than 80 per cent, this international data exchange involved aggregated data, which had been collected directly for official statistics. Some offices are only involved in providing aggregated data for dissemination to international organizations. In fact, only one office in three engages in micro-data exchange.

Usually, data exchange takes place in statistics where cross-border transactions are recorded and the exchange aims at minimizing bilateral asymmetries between the same cross-border flows reported by different countries. International data exchange may be facilitated by international organizations and sometimes based on bilateral or multilateral agreements between countries.

The increasing trend of micro-data sharing started 40 years ago when the first countries took steps towards the reuse of micro-data at national level. About 50 years ago, all countries were in the down-left corner, whereas currently only three offices remain in this position (see the following graph).

Graph 1. Trends in the exchange and reuse of micro-data



Gradually more statistical offices started reusing existing data and moved to the down-right corner. During the recent years, this was followed by a shift upwards to exchanging micro-data at international level. Major factor here is the Eurostat's SIMSTAT-project that enabled international micro-data sharing between statistical offices of the EU Member States in the domain of international trade in goods statistics. Now 18 offices are in the up-right corner and this figure may increase in the near future.

Globalization has put emphasis on the treatment of MNEs. *Exchange of data on MNEs* is still relatively rare. Every fourth responding office had examined the activities of MNEs with other countries and every third office within a country with other producers of official statistics. Some countries mentioned that they have benefitted from organizing MNEs' data collection to a specific large and complex enterprises unit (LCU). Similar units are foreseen in a few more countries. The staff working in LCUs is often specially trained. Centralized management of data sharing may also support progress and good practices in data exchange.

Institutional prerequisites for data sharing are common in the responding offices. National legislation that regulates data sharing exists in 90 per cent of the countries that responded and a common business identifier is widely used, in more than three out of four countries. The fact that most of the countries have developed legislation that regulates data sharing implies that the protection of confidential data is well addressed in national laws. However, it does not mean that data sharing for statistical purposes would be well regulated or enabled. In some countries data exchange is agreed and defined in statistical work programs. Data sharing agreements between administrative data providers and producers of official statistics are very common.

In the survey almost 90 per cent of offices reported the improved consistency as the main benefit of data sharing and over 80 per cent reported better data quality such as accuracy, relevance and timeliness. Efficiency gains and reduced response burden were pointed out in two thirds of the replies. Data sharing may also increase coverage of target population and enable a more detailed analysis and understanding of business activities. The increased collaboration and reuse of data helps to promote common standards and classifications.

The main difficulties linked to data sharing include heavy procedures to ensure confidentiality or increased risks of disclosing confidential data (mentioned by two thirds of respondents), limiting legal frameworks (mentioned by 60 per cent) and insufficient technological readiness (in almost half of offices). The possible decrease in respondents' trust is considered as a key risk by 15 per cent of offices. The other major issues that were mentioned include:

- the increased dependency from other national statistical offices or administrative data providers
- problems in linking data in the international data sharing
- lack of resources dedicated to this type of work
- when using administrative data the legal unit is not always the same as the statistical unit for compiling statistics
- quality issues especially coverage and
- timeliness of external data sources and high investment costs

According to the respondents no serious risks had materialized due to data exchange. Eleven offices reported that data exchange increased criticism about the quality of data and ten offices reported that data was misinterpreted. Very critical risks relating to the reputation of statistical office or respondents trust were less frequent (two observations each).

The respondents assessed the capacity of the office to carry out data exchange very positively. Only a few critical views were expressed. Staff's ability to analyze data received the highest ranking as 85 per cent of offices assessed the capacity as medium or high. Staff's skills in data mining and linking were not so highly ranked, as 75 per cent of responding offices assessed these skills as being at the medium or high level. The offices noted that further training will be needed.

In general, the international organizations play a key role in facilitating the sharing of best practices and provision of fora for discussions. Guidance and standardization issues are also important areas for international organizations' contribution. According to the country responses, the international activities that would facilitate data exchange include developing methodologies to ensure confidentiality (65 per cent), sharing technological solutions and tools for data exchange (63 per cent) and developing general guidance for data exchange (56 per cent).

III. ESTABLISHING THE TASK FORCE ON THE EXCHANGE AND SHARING OF ECONOMIC DATA

To advance the work in the area of data exchange, the CES established a Task Force under the CES Steering Group on National Accounts. The Task Force has a mandate for three years, until June 2020, after which it will submit a final report.

To share initial results of work early in the mandate, the Task Force will inform the Group of Experts on National Accounts and the Group of Experts on Business Registers, as relevant.

The Task Force will also consult the Intersecretariat Working Group on National Accounts (ISWGNA) and the Advisory Expert Group (AEG) on National Accounts to ensure effective coordination of work.

The objectives of the Task Force are twofold. At the first stage (April 2017 – June 2018) the Task Force will analyse the concrete examples of data exchange implemented by NSOs that help statisticians to depict economic reality, profile MNEs and provide meaningful data on their activities. Through these concrete examples, the Task Force will identify enablers and obstacles of data sharing and review the practical requirements of data exchange.

At the second stage (July 2018 – June 2020), the Task Force will develop guidance, tools and principles to facilitate the exchange of economic data (including granular data and information on business structures) by NSOs. The guidance will also highlight innovative ways to exchange economic data to increase the quality, coherence and granularity of statistics and the ability to better analyse the activities of MNEs.

The work will build on existing national and international experience, including the results of related initiatives of UNSD, Eurostat, OECD, WTO and IMF. The Task Force will ensure coordination with and input to corresponding work undertaken by the Expert Group on International Trade and Economic Globalization Statistics (ITEGS), the G20 Data Gaps Initiative, Eurostat's Integrated Global Accounts (IGA) –projects, the CES Task Force on Common Elements of Statistical Legislation and the Data Integration Project under the UNECE High-level Group for the Modernisation of Official Statistics.

Currently, the following countries and international organizations are participating in the Task Force: Canada, Denmark, Finland (Chair), Italy, Ireland, Mexico, the Netherlands, United Kingdom, United States, ECB, Eurostat, IMF, OECD, UNECE, UNSD and WTO. The Task Force involves experts on national accounts and balance of payments as well as business statistics, foreign trade and other related economic statistics. UNECE acts as Secretariat of the Task Force.

IV. INITIAL FINDINGS BY THE TASK FORCE

The CES Bureau discussed the in-depth review in October 2016, and the topic of the exchange and sharing of economic data was discussed in the CES plenary session in June 2017 to seek input from a wide group of countries. A detailed work plan was drafted based on initial inputs from Task Force members during the summer and in line with feedback from the CES and its Bureau. The Task Force started the substantive work in October 2017 with a virtual sprint week.

The Task Force decided to split the work of the first phase in four tasks:

- Task A - Review concrete examples of useful data exchange (Lead: Finland)
- Task B - Identify enablers and obstacles and propose practical options (Lead: Canada)
- Task C1- Find ways to describe MNEs and changes in their structures (Lead: United States)
- Task C2 - Large Cases Units in Statistical Institutes (Lead: Ireland – *to be started later*)

Task Team A has studied quite a few real data exchange cases and analysed the challenges and benefits experienced. They have also collected examples of agreements and Memoranda of Understanding that regulate data exchange in the studied cases.

Before considering international data exchange on a larger scale, the first priority is to improve national consistency of data on large multinational enterprises (MNEs) across statistical domains. But is it possible to achieve coherent national data on large MNEs

without any international data exchange? Having counterpart data helps to solve national consistency problems. Examples show clearly that international profiling has improved the understanding of national structures of MNEs. Based on practical experience, it seems that international profiling should at minimum cover the largest and most complex MNEs. It even seems necessary to change from a national to a global view when discussing large and complex MNEs.

There are rules in place for national data sharing and even for international data sharing among the European Statistical System (ESS). Article 21 of the Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics as well as Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank accommodates the possibility of transmission of confidential data both within the ESS and the ESCB.

However, there are no frameworks for bilateral or multilateral data exchange between statistical producers beyond the European Union (EU). At the same time, MNEs operate well beyond the EU. Perhaps the rules and conditions for national data sharing could be applied to international data sharing.

The important question is, of course, what is the reaction of large MNEs to the exchange of their data among the producers of official statistics. The results of the ESSnet on International Profiling provide some light to this question. Practical experience shows that obtaining the required information from MNEs is difficult in some countries due to the sensitivity of information. However, there was also an example where the sensitivity was not considered a major issue. For some cases, the majority of this information was available in published accounts and, therefore, there were no resulting issues with the sensitivity of data. This example also illustrated that businesses demonstrate a cooperative attitude once they are convinced that the statistical office is applying strict rules on confidentiality through signed agreements, and that data will be used for statistical purposes only.

Better profiling of MNEs is needed to improve the quality of economic statistics. That requires a level of international data sharing not seen before. This can only be achieved if clear rules and processes are put in place. All practices need to be transparent and well explained to the enterprises whose data are shared.

Table 1 provides a summary of studied data exchange cases with respect to two essential aspects: data sensitivity (aggregate level data or confidential micro data) and purpose of use (for one-off study or for regular compilation of statistics). Table 2 summarises some key findings which enabled data exchange for different types of cases. One-off aggregate level data exchange seems quite easy to organise if there is a common interest between the parties. Regular data exchange of confidential micro data in turn requires legislation or at least a lot of administrative and technical work and trust between the parties.

The Task Team will collect more examples of data exchange (at international or national level), especially on ad hoc data exchange. Finland is also preparing a separate guidance note concerning ad hoc data exchange related to discussions on bilateral data assymetries and MNE restructuring cases. The group is also collecting more information on concreate benefits and challenges of the studied examples of data exchange.

Table 1. Summary of different types of data sharing examples

	One-off data exchange	Regular data exchange
Aggregate level data	- WTO trade asymmetries (case Costa Rica) - IMF workshops on FDI asymmetries	- Eurostat and ECB data exchange on NA, BOP and MIP data - Inter-Agency Group on Macro-Economic Statistics
Confidential micro data	- Pilot exchange of micro-data on intra-EU trade - Nordic FATS statistics - Testing of European Profiling (UK) - Micro data linking (e.g. linking data on foreign-owned U.S. companies to domestic employment data)	- Exchange of Import Data between Canada and the United States - EuroGroup Register (EGR) - FDI Network - Intra-EU trade in goods statistics - National central credit registers - OECD report on micro-data access

Table 2. Key prerequisites for successful data exchange

Type of data exchange	Key prerequisites for successful data exchange
One-off aggregate level data exchange	- Understanding the remarkability of making mirror comparisons to improve quality of national statistics - Availability of comparable data and metadata - Resources dedicated for this type of work
Regular aggregate level data exchange	…previous (see above) and - Identified need for regular data exchange - Willingness to compromises and to absorb costs - Mutual agreement between participants - Pre-Specified data structure - Automatic processes to manage mirror data
One-off Confidential micro data exchange	…previous and - Trust between participants - Agreement on use and storage of micro data - Secured process for exchange
Regular confidential micro data exchange	…previous and - Change of culture how to produce statistics - Common legislation and risk management - Secured and standardised process for data exchange

Task Team B has drafted a short summary on the obstacles and enablers of data sharing using input from the survey conducted for the in-depth review and ideas among Task Force members. The summary has been grouped into ten different aspects with elements that either prevent or facilitate data sharing (see table 3).

Table 3. Obstacles and enablers of data sharing

ASPECTS	OBSTACLES	ENABLERS
Legal	Too limited confidentiality regulations	Authorized exchange of confidential data allowed
	No legal framework covering data exchange	Common legal framework for data exchange
	No access to data held by other authorities or private parties	Agreements on data exchange between producers
Resources	Lack of resources for data exchange	Dedicated resources for data exchange and analysis
	Large technical investments needed	Shared solutions for data exchange
	High costs and time needed to start data sharing	Higher efficiency and cost savings in data collection
Data linking	No common identifiers internationally	Common and unique identifiers
	Different data collection units, concepts and classifications	Harmonized units, concepts and classifications
	Scattered and unidentified sources of data	Mapped and linked datasets
Substantive	Difficulties to collect even national data	Meaningfulness of word level data
	Poor understanding of the data needed for exchange	Good understanding of critical data items
	Difficulties to profile and capture MNEs' activities	Better understanding of MNEs
Process	No Global Groups Register	Existence of the Euro Groups Register
	Production processes are not synchronized	Defined and agreed data exchange process
	Poor timeliness of data exchange	Regular timed data exchange in critical areas
Cultural	No buy-in from management of the statistical office	High-level commitment to data sharing
	Lack of trust between data producers	Good collaboration with data producers
	Lack of willingness among respondents	Proven reductions in response burden
Risks	Increased dependency from external data	Coping strategies for using multiple data sources
	Risks to respondent relations	Good communication and trust with respondents
	Risks to image of official statistics	Agreed rules for risk management
Uncertainties	Lack of information about data exchange options	International platforms for collaboration
	Lack of information about benefits	Examples of successful data exchange
	Uncertainty about impacts on the quality of statistics	Proven improvements in quality
Knowledge	Lack of necessary methodological knowledge	Well-developed methodologies for data linking
	Limited data mining skills	Well-developed data mining skills
	Lack of knowledge about resolving discrepancies	Practical examples of successful data reconciliation
Technical	Insecure environments of data exchange	Secure technology for data exchange
	Different data storage and exchange formats	Common data storage and exchange formats
	High computing capacity needed	High performing computing environment

As a next step, the Task Team will further elaborate and describe the obstacles and enablers and seek possible solutions for dealing with those obstacles and consider the tools required to address to obstacles that will lead to a greater level of national and international data sharing.

One way to address the legal obstacles associated with data exchange is to help countries draft legislation that facilitates data exchange. The Task Force has a unique opportunity to engage with-the UNECE Task Force on Common Elements of Statistical Legislation (co-chaired by Latvia and the United Kingdom). They are drafting the guidance for all statistical offices and their work also touches upon data exchange.

The Task Force has derived common elements of statistical legislation using the Generic Law on Official Statistics (GLOS) as a starting point. UNECE developed GLOS with Eurostat and EFTA for the countries of Eastern Europe, Caucasus and Central Asia in 2015-2016. Then the Conference of European Statisticians asked the Task Force to extend the guidance to all countries in the region and beyond.

The Task Force on Exchange and Sharing of Economic Data has a good opportunity to provide views on how to enable secure data exchange for statistical purposes both nationally and internationally between statistical producers and with international organizations. The draft recommendations on statistical legislation will be finalised by the end of this year. Many countries are already using GLOS when revising their statistical laws, and the new guidance is likely to be used by many more countries.

Task Team C1 has made summary of types of MNEs for data exchange and their critical data to be exchanged based on inputs received so far. Among group members, the areas that should be the focus of data exchange were the following:

- Complex ownership structures, especially including special purpose entities
- Firms with a large amount of activity (e.g., employment or sales/turnover)
- Re-arrangements and relocations of MNEs
- Global production arrangements
- Ownership of intellectual property products

Firms with these characteristics are difficult to measure, causing revisions to economic statistics and bilateral discrepancies. They may also have domestic impacts on employment, productivity, taxation, etc. that would be important to study and understand. Of course firms may fall into several of these categories, but this overlap would highlight the need to exchange the data.

As a starting point, it would be very useful to derive business cases starting from actual cases, classifying the MNEs according to the ways they act globally. The Task Team plans to analyse the results of other task forces or groups, for example:

- During the activities of the ESSnet on International Profiling, colleagues from INSEE collected examples from the France, UK, Italy and the Netherlands of oil companies to show how the business lines organizations were quite similar.
- Intellectual property rights are under analyses in a specific task force.
- Digital economy MNEs are in the public eye not only for statistics.
- U.S. companies in Europe often adopt similar organizational structures.

This Task Force could expand on the work of these other groups to provide generalized examples of MNEs based on real life cases.

Once the critical MNEs for data exchange have been identified, the Task Team needs to determine which data items would be most useful to share. Needs may vary depending on the data sharing partners. The relevant arrangements are summarized as: 1) domestic microdata exchange among different institutions (responsible for different domains), and 2) international microdata exchange among NSOs of different countries and among NSOs and international institutions. The focus or needs of the institutions could be in some of the following categories:

- Register-type information, including identifiers
- Structures of MNEs
- Key globalization variables
- MNE data most prone to revision
- Financial/operations data, such as sales/turnover, employment, income
- Accounting standards information

Task Team C2 has not started working yet. The Task Force made a decision to postpone this task to use all resources on the other three tasks at the beginning.

Several countries have organized the collection and/or consistency checking of some MNEs' data to specific organizational units focusing on large and complex enterprises unit (LCU). Currently, more countries are planning to establish similar units. Centralized management of MNE's data may also support better documentation of data issues and a higher concentration of skills and knowledge on MNEs that facilitates national and international data exchange.

When the CES plenary session discussed the topic in June 2017, they agreed that establishing LCUs at national statistical offices is a prerequisite for having consistent data. The Conference expressed support for creating an international network of experts dealing with such enterprises' data.

Such a network would be useful for exchanging best practices in dealing with MNEs' data. The network could also facilitate identifying the critical MNEs for data exchange, carry out data exchange and analysis, and develop common ways for communicating with and approaching large and complex MNE respondents.

Once the Task Team starts working, it will use the Chapter on LCUs of the Guide to Measuring Global Production as a basis, and update the information with latest work in the area (EU early warning system, Nordic LCU network, etc.). UNECE will review possibilities of establishing an international network of experts on large and complex enterprises to work alongside with the UNECE/Eurostat/OECD Group of Experts on National Accounts.

V. ISSUES FOR DISCUSSION AT THE AEG

The Task Force would like to ask AEG's opinion on the following questions:

- **From the AEG's perspective – where could the quality of the SNA be improved by enhanced data sharing?** What data items are most critical for data exchange? These data items could include those that are most prone to revision, have a larger impact on the main aggregates of the SNA or depend highly on global activities of MNEs.
- **Is the AEG aware of examples of best practices or success stories related to data sharing?** For instance, the European Early Warning System was set up to share early information (without confidential data) on real life cases related to changes in location, ownership of assets or economic control of MNEs as well as global production arrangements and to coordinate the approaches of the countries concerned. Should the Task Force review

the possibilities of developing further and expanding this or other best practices to the global level?

- **Moving forward – are there any updates planned for the SNA that will benefit from improved international and national data sharing?** What could be the focus and format of such data sharing? For instance, could the establishment of a network of experts on large and complex enterprises help in future data sharing?