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Items for information: short-term economic indicators

Short-term economic statistics

Report of the Secretary-General

Summary

The present report was prepared in accordance with Economic and Social Council decision 2013/235. The report describes the joint initiatives of the Statistics Division of the Department of Economic and Social Affairs and the Statistical Office of the European Commission undertaken in collaboration with Statistics Canada, Statistics Italy, Statistics Netherlands and the Russian Federal State Statistics Service for implementation of the international programme of work on short-term economic statistics endorsed by the Statistical Commission at its forty-second session. The Commission is invited to take note of the report.

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 * E/CN.3/2014/1.

I. Recommendations made by the Statistical Commission

1. At its forty-second session, held from 22 to 25 February 2011, the Statistical Commission, in its decision 42/107 (see E/CN.3/2011/24, chap. I.B):

(a) Agreed with the proposed work programme for short-term statistics for rapid estimates, business cycle composite indicators, tendency surveys, the data template, analytical indicators and the proposed governance structure;

(b) Requested that the requirements of national accounts, the national statistical system and other national governance arrangements be taken into account in the implementation of the programme of work, and also requested that due attention be given to the issue of improvement of source data;

(c) Encouraged Member States to establish national central data hubs using Statistical Data and Metadata Exchange standards on a voluntary basis, in accordance with the proposed internationally accepted data template, to ensure harmonization with international guidelines, while expressing the need for further consultations with Member States and flexibility in the time horizon for the creation of those data hubs;

(d) Noted the work done by international and regional institutions in providing guidance on the compilation of short-term economic indicators, and urged the Statistics Division of the Department of Economic and Social Affairs to work in close collaboration with those institutions in the preparation of the programme on short-term economic statistics for the purpose of harmonization of practices;

(e) Encouraged Member States to participate in the global assessments on rapid estimates and business cycle composite indicators and to submit their practices of compilation and use of short-term economic indicators to the Statistics Division for inclusion in the knowledge base on economic statistics of the Division website;

(f) Requested the Statistics Division to appoint an interregional adviser to assist countries in training and capacity-building for the international programme on short-term statistics and to work closely with the regional commissions in this area;

(g) Requested the Statistics Division to report to the Commission, in due course, with a detailed work programme on short-term economic statistics highlighting the resources required for the programme and the limitations involved in its implementation.

II. Actions taken

2. The Statistical Commission, at its forty-second session, considered an international programme of work on short-term economic statistics as part of a coordinated statistical response to the economic and financial crisis. The international programme comprised four themes, namely, business cycle composite indicators, economic tendency surveys, rapid estimates, and data template and analytical indicators. The Commission, inter alia, approved the preparation of handbooks on those themes with a view to providing guidance, best practices and harmonized principles to assist member States in compiling and reporting internationally comparable short-term statistics.

3. Preparation of the handbooks on the above themes is in progress and is being carried out by working groups constituted for the purpose, under the aegis of a steering group on short-term economic statistics. The steering group comprises Statistics Canada, the Central Bureau of Statistics (CBS) Netherlands, the Russian Federal State Statistics Service (Rosstat), the Statistics Division and the Statistical Office of the European Commission (Eurostat). The progress of work for each of the themes is discussed below.

A. Cyclical composite indicators

4. Cyclical composite indicators are important in their own right because they address ongoing concerns in respect of assessing short-term changes in economic activities besides serving as an integral part of the early warning system in terms of providing information about the occurrence and timing of upturns and downturns of the economy.

5. The programme of work on cyclical composite indicators aims to provide best practices and harmonized principles on the compilation and reporting of such indicators and comprises two deliverables, namely (a) the preparation of a handbook on cyclical composite indicators, and (b) an inventory of country practices on cyclical composite indicators through a global assessment.

6. The working group tasked with preparation of the handbook on cyclical composite indicators comprises CBS Netherlands, Eurostat, the Conference Board and the Statistics Division. The working group is led by CBS Netherlands. The handbook seeks to provide statistical guidance on harmonized principles for application in the formulation of cyclical composite indicators and standards for their compilation and presentation. The handbook is expected to be useful not only to those agencies of national statistical systems compiling or aspiring to compile cyclical composite indicators but also to those statistical agencies that are collecting short-term economic statistics and constructing data sets, which are used as component data for the construction of composite indicators. The handbook is also expected to be equally relevant for official statisticians in developing countries.

7. It is expected that the guidance provided in the handbook shall assist compilers in producing cyclical composite indicators in a comparable way, to enable reliable international comparisons of economic performance and behaviour using the best international practices. In addition, it will assist countries that plan to set up a more comprehensive system of cyclical measures not only by providing the methodological foundations for business or growth cycle compilation, but also by offering practical guidance on individual steps and elements of the compilation process. Further, the handbook will serve the needs of producers of short-term statistics and analytical users by making them aware of the statistical methods and techniques employed in the construction of composite indicators.

8. The handbook comprises 25 chapters. An annotated outline of the handbook with chapter titles and content is contained in annex I. First drafts of almost all chapters are available and the draft handbook is expected to be ready early in 2014, for worldwide consultations, and finalized by the end of 2014.

9. During the global consultations on the handbook, a survey of country practices will be conducted on compilation and dissemination of cyclical composite indicators

with a view to broadening the existing inventory on the subject. The global assessment will also assist in the review of the quality of cyclical composite indicators.

B. Economic tendency surveys

10. Economic tendency surveys provide qualitative information that cannot be collected using quantitative statistical methods. They have proved to be a cost-effective means of generating timely information on short-term economic developments, which can be seen as a valuable complement to the system of quantitative statistics. They also serve as an integral part of an early warning system, since they provide information on the occurrence and timing of upturns and downturns of the economy.

11. The programme of work on tendency surveys aims to provide best practices and harmonized principles on tendency survey sample selection, questionnaire design, survey questions, survey execution, data processing, dissemination of results and use of composite tendency indicators. It encompasses one deliverable, namely, the handbook on economic tendency surveys.

12. For preparation of the handbook on economic tendency surveys, a working group has been established comprising the Statistics Office of Italy (ISTAT), the Organization for Economic Cooperation and Development (OECD), KOF-ETH Zürich, the National Statistical Coordination Board Philippines, CBS Netherlands and the Statistics Division. The working group is led by ISTAT. The preparation of the handbook is in progress. Working group members contributed to the drafting of the chapters and to their peer review. The European Commission and the national statistics office of France have also reviewed draft chapters of the handbook. In preparing the handbook, the working group has taken into account the existing guidelines on the subject, derived mainly from the European Commission and OECD. The new handbook expands the scope of the existing guidelines to include more economic sectors and focuses explicitly on the needs of developing countries in administering tendency surveys. It will draw on a wide range of experience and expertise, and outline harmonization practices, focusing, in particular, on the harmonization of the list of questions by economic activity.

13. This handbook is expected to constitute the internationally accepted set of guidelines applicable to all countries and multiple economic activities. It will be useful for national statistical organizations that carry out or intend to carry out tendency surveys, as well as for the users of the statistics. The handbook will provide guidance on the process of setting up tendency survey operations, data processing and analysis. The handbook will also guide users on the applications of tendency surveys to macroeconomic situations and provide guidance on the dissemination of survey results. It is intended to serve the needs of analytical users by making them aware of the statistical methods and techniques that are employed in tendency surveys and associated with composite tendency indicators.

14. Annotated details of the handbook, which comprises 10 chapters, are contained in annex II. The first draft of all the chapters is available and the handbook is expected to be ready early in 2014, for worldwide consultations, and finalized by the end of 2014.

C. Rapid estimates

15. Rapid estimates, which are indicators that are available with a relatively shorter time lag, are important in their own right because they provide the first official assessment of short-term changes in economic activities. Such indicators are known by different names depending on their time lag in availability vis-à-vis the reference period of the activity they intend to measure. For example, forecasts are defined as having been made before a reference period (say, a quarter) commences, nowcasts as being made during the relevant period, and flash estimates as being made immediately or shortly after the period ends, when disaggregated information remains incomplete.

16. Rapid estimates (i.e., nowcasts, flash estimates, advanced/preliminary estimates) are regularly compiled in several countries and have become a referential statistical product for many statistical institutions. The increasing attention devoted to rapid estimates by the media and policymakers underlines the role that such estimates play in providing an early estimate of key short-term macroeconomic indicators.

17. The programme of work on rapid estimates aims at developing international statistical guidelines on best practices and harmonized principles for the compilation and reporting of rapid estimates of key macroeconomic indicators. The work programme comprises three deliverables, namely (a) a glossary of terms, (b) a handbook on rapid estimates and (c) an inventory of country practices relating to rapid estimates through a global assessment.

18. The glossary on rapid estimates is expected to clarify the different typologies of rapid estimates, their purposes and their characteristics, and to establish a common understanding of rapid estimates. It is intended for official statisticians and users of key short-term macroeconomic indicators and is expected to provide a harmonized terminology. The compilation of the glossary on rapid estimates has been completed and the implementation at the "Statistics explained" website of Eurostat is almost complete, although the final pages need to be validated in order to enter the dissemination chain. While the glossary is a self-standing product, it will also be annexed to the handbook on rapid estimates.

19. For the drafting of the handbook on rapid estimates, a working group has been established comprising Eurostat, the Statistics Division, CBS Netherlands, and the national statistics offices of Mexico, Singapore and South Africa. The working group is led by Eurostat.

20. The handbook is expected to provide international statistical guidance based on best practices and harmonized principles for the compilation and reporting of rapid estimates. The handbook, which will be particularly useful to official statistical compilers and users, will outline practical and suitable compilation methods and issues, drawing on a wide range of experience and expertise. Its preparation has benefited from recent theoretical and practical developments in the area. The handbook is intended to assist compilers in producing rapid estimates of key short-term macroeconomic indicators in a comparable manner, using best international practices. It is also intended to assist countries that plan to set up a more comprehensive system of estimates of key macroeconomic indicators not only by providing the methodological foundations for the compilation of rapid estimates, but also by offering practical guidance on individual steps and elements of the compilation process.

21. An annotated outline of the handbook, which comprises 12 chapters, is contained in annex III. The drafting of the handbook is in progress. In view of the fact that there are no available guidelines on the subject and that country practices are still evolving, it is expected that the first draft of the handbook may be available by the second quarter of 2014, for worldwide consultations, and finalized by the end of 2014.

D. Data template and analytical indicators

22. The focus of the programme of work on data template and analytical indicators is the establishment of an internationally accepted data and metadata template for short-term economic indicators for use in macroeconomic surveillance, early warning of economic and financial vulnerabilities and detection of turning points in business cycles. The data template endorsed by the Statistical Commission comprises three tiers: the first tier consists of the minimum required short-term economic indicators that have strategic importance and are widely available; the second tier consists of analytically important short-term indicators that are less widely available; and the third tier contains short-term indicators that have national significance, given the structure of the economy. The short-term economic statistics template is contained in annex IV.

23. The work programme has three deliverables, namely (a) an internationally accepted data template together with corresponding reference metadata, (b) a statistical guide for the internationally accepted data template and metadata structure and (c) an updated knowledge base on economic statistics.

24. The finalization of the review of the structure of the data and metadata template in its three tiers must take into account the latest developments in other international initiatives (such as the Principal Global Indicators database for the Group of Twenty (G20) countries) if an all-inclusive approach to the internationally accepted data and metadata template, irrespective of the level of development of the country, is to be achieved.

25. A working group comprising Eurostat, the Statistics Division and the national statistical offices of Brazil and India has been constituted to prepare the statistical guide to the internationally accepted data template and metadata structure. The working group is led by the Statistics Division. The statistical guide will elaborate methodological descriptions and the use of individual short-term economic indicators. It will explain the statistical and analytical properties of short-term economic indicators, why they are relevant in explaining economic activity and how they relate to an integrated set of short-term economic statistics of quarterly national accounts and component data. The guide is intended to serve both the compiler and the user of the indicators. It will contain useful links to reference material offering more in-depth expositions. The first draft of the guide is available and it is expected to be ready early in 2014, for worldwide consultations, and finalized by the end of 2014.

E. Updating the knowledge base on economic statistics

26. Updating the knowledge base on economic statistics is an ongoing activity entailing inclusion of new and updated methodologies and country practices.

III. Future work

27. Countries will be invited to draft reports on their initiatives with a view to establishing central data hubs with a single access point for the national statistical system based on the internationally accepted data template on short-term economic indicators. Country practices are expected to cover aspects of institutional governance and coordination mechanisms, assessment of availability and quality of the short-term economic indicators, and the selection of the technical infrastructure designed for the sharing and exchange of data and metadata.

28. Regional initiatives have emerged that work towards capacity-building in countries, with a view to establishing a programme for compilation of short-term economic statistics. The Economic and Social Commission for Asia and the Pacific (ESCAP) is implementing a regional programme on economic statistics in Asia-Pacific for member States in the region in order to develop the capacity for producing a core set of economic statistics, including short-term economic indicators, in line with current international standards. The Economic and Social Commission for Western Asia (ESCWA) is in the process of implementing a development account project on short-term economic indicators so as to enhance the regional capacities of member States in this specific area and in the overall field of economic statistics and national accounts.

29. Experiences associated with these regional efforts will be studied and may serve as the basis for guidelines for use by other regions that are planning to engage in similar exercises.

30. The interregional adviser whose function would be to assist countries with the training and capacity-building needed to implement the international programme on short-term statistics and to work closely with the regional commissions in this area, could not be appointed for lack of resources.

IV. Conclusions

31. The Commission is invited to take note of this report.

Annex I

Handbook on cyclical composite indicators

Table of contents

Section 1: Introduction and definitions

Chapter 1: Introduction and overview of the handbook

A very short overview of main definitions of business cycles and indicators, with a description of business cycle timing classifications (the leading, coincident and lagging distinctions among indicators). A brief discussion of the usefulness of cyclical composite indicators for policymakers, decision makers in business and no-profit sectors and analysts; advantages and drawbacks; costs and benefits of a direct involvement of statistical agencies in the compilations of cyclical composite indicators; brief overview of the handbook:

Chapter 2: A brief history of business cycle measurement and analysis

The chapter will present alternative theories of cyclical fluctuations, including exogenous and endogenous theories. A classification of cyclical movements according to their duration and main characteristics should also be provided. The construction of tools for cyclical monitoring, starting from the purely graphical approaches to the simple and complex barometers, should also be presented. Chapter 2 should end with a discussion of the work of Burns and Mitchell and the presentation of the National Bureau of Economic Research (NBER) approach, which grew out of their work, to monitoring business cycles. The Minsky approach in the 1950s based on the growth cycle should also be briefly mentioned (as well as the work of Mintz in the late 1960s, followed by that of Klein and Moore).

Chapter 3: Definitions and taxonomy of indicators

This chapter will provide clear definitions and the classification of composite indicators, starting from the distinction among leading, coincident and lagging, already mentioned in chapter 1 but only in very general terms.

The chapter will provide classifications of indicators according to the:

• Purpose (cyclical or turning points or forecasting growth rates)

• Kind of data used (only qualitative, only quantitative, mixed; use or non-use of financial variables; use of soft data such as sentiment indicators, climate indicators, diffusion indexes, versus use of hard data)

• Aggregation scheme (subjective, based on non-parametric, parametric or semi-parametric methods)

• Approach and the statistical tools used for estimation and data selection (classical approach of Burns and Mitchell, factor- and principal components-based indicators; time series based indicators; regression-based indicators)

Since the chapter is intended to provide a general framework and an introductory overview of various kinds of indicators, it will therefore not contain too many technical details for those indicators but rather will offer a basic

explanation of motivational and intuitional elements in order to help users (and producers) better understand them. Details will be provided in the following chapters in accordance with the table of contents. Some very basic examples will also be presented.

Section 2: Data requirements

Chapter 4: Data availability, frequency and adjustment techniques

The chapter will discuss data issues: missing data, data unavailability at a desired frequency, proxies; transformation issues: seasonal and calendar adjustment, deflation; time-coverage issues: back calculation. This chapter should introduce the basic data requirements for creating and using systems of indicators. It will also discuss the challenges faced by statistical agencies in meeting those requirements and the means of addressing them.

Section 3: Variables and model selection techniques

Chapter 5: An overview

The chapter will provide an overview of the subject treated in section 3, entitled "Variable and model selection techniques", together with a description of the structure of the chapters contained therein. This chapter addresses the question, Which variables are most useful for monitoring and predicting business cycle movements?

Chapter 6: Review of parametric and non-parametric variable and model selection techniques

The chapter will describe didactically alternative parametric, semi-parametric and non-parametric approaches to variable selection and model selection. Since in the construction of composite indicators (variables and model) selection techniques play a crucial role, the chapter should be particularly thorough in demonstrating the utility of each technique. A comparative analysis of alternative techniques demonstrating strong and weak points, as well as advantages and drawbacks, should also be presented. Some examples specifically oriented to the construction of composite indicators will also be presented in order to provide practical guidance in the use of such techniques.

Chapter 7: Unbalanced large versus small data sets

The chapter will describe how to work with large and small unbalanced data sets to construct cyclical composite indicators.

Section 4: Indicators measuring cyclical movements

Chapter 8: An overview

This chapter will provide an overview of the subject treated in this section together with a description of the structure of its chapters. The chapters in this

section discuss how to measure cyclical movements with the help of composite indicators.

Chapter 9: The Conference Board approach

This chapter will describe the Conference Board (TCB) approach to the construction of cyclical composite indicators. It will describe clearly the justification for the choice of the reference cycle, the approach to variable selection, the aggregation scheme, etc. This chapter will also present the main similarities to and the differences from the original NBER approach and examine the latest changes and enhancements proposed after the global economic and financial crisis.

Examples based on the existing indicators published by TCB for countries other than the United States of America will serve to illustrate, step by step, the construction of such indicators and how indicators are customized according to the economic features of each country.

Chapter 10: De-trending methods: parametric versus non-parametric and univariate versus multivariate

This chapter will describe the most relevant de-trending and cycle extraction procedures based on filters. It will also present a clear classification of the approaches and, for each method, a clear description of its functioning and a presentation of main advantages and drawbacks. Problems related to end-point estimation, characterizing some of the proposed methods, will also be addressed, as well as the means of eventually overcoming such difficulties.

Additional problems related to the choice of the length of the band, the size of the smoothing parameter and the approximation of infinite filters with finite ones will also be discussed. Users should also be made aware of the difference between reliance on a purely deterministic definition of cycle and reliance on a stochastic one, and the features of related methods. The unobserved component model should also be discussed as a flexible framework for generating trend and cycle by combining purely deterministic and purely stochastic approaches in a completely data-driven approach so as to achieve the best definition of such components.

Examples will be provided to enable a discussion in comparative terms of the results obtained by using various kinds of methods as well as different settings of a given filter (e.g., the Hodrick Prescott (HP) filter).

Chapter 11: The OECD approach

This chapter will describe in detail the construction of the OECD composite leading indicators (CLIs). It should clearly outline the justification for the choice of the reference cycle and explain the variable selection approach followed, as well as the de-trending methods and the aggregation scheme. The main differences from and similarities to the original approach, based on the so-called phase average trend (PAT) algorithm, will be presented, as well as the latest methodological improvements, including those made after the global economic and financial crisis.

Examples derived from existing CLIs for some member States will serve as the basis for a guide to the step-by-step construction of CLIs, showing that they can be customized according to the economic features of each country.

Chapter 12: The Stock and Watson approach

A description of Stock and Watson approaches to the construction of CCIs will be presented in this chapter.

Section 5: Indicators for turning points detection

Chapter 13: An overview

The chapter will provide an overview of the subject treated in this section together with a description of the structure of its chapters, which address the question how to use indicators to locate and detect turning points in business and growth cycles. The overview shall also discuss the Bry-Boschan algorithm based on the NBER approach. The last chapter discusses prediction of turning points.

Chapter 14: Alternative models for turning points composite indicators

The chapter will present an overview of available alternative time series based and regressions-based non-linear techniques as well as binary regression (probit, logit) as techniques for constructing turning points composite indicators (but very rapidly inasmuch as the subject will be analysed in depth in another chapter). It will explain the added value of using non-linear techniques instead of linear ones in this specific field. Advantages and drawbacks associated with each approach will be clearly discussed, with a particular focus on the trade-offs between timelines and reliability and the risk of false signals.

Problems related to the optimal means of defining a threshold, when applicable, and the use of a censoring rule to prevent or reduce the occurrence of false signals will also be addressed in the chapter. Problems related to the choice of reference cycle or cycles will be mentioned only marginally, since they will be addressed in greater detail in other chapters. Some illustrative examples will be provided, together with comparisons of Markov Switching (MS) and self-exciting threshold autoregressive (SETAR) models, for example.

Chapter 15: Composite indicators detecting turning points within the ABCD framework

The chapter will describe the alternative cycles definitions and characteristics and discuss briefly the problem related to the choice of the reference cycle for the construction of turning points indicators. It will also demonstrate the advantage of monitoring together several kinds of cycles by using the ABCD approach or its extended version, the $\alpha AB\beta CD$ approach. The two schemes are also described in some details graphically. The chapter will briefly present the construction of a historical dating based mainly on non-parametric dating algorithms, together with a short description of the proposed algorithm. The main focus will be on the use of such dating as a tool for comparing historically, and possibly in real-time, alternative specifications of turning points coincident indicators. The chapter will discuss the construction of turning points indicators for different kind of cycles, mainly focusing on: identification of an appropriate dataset; variable selection techniques; model selection; model estimation; and evaluation criteria of the indicators. The problem of data transformation, the number of regimes and the weighting scheme to be used in the construction of composite indicators will also be

addressed. By contrast, problems related to the definition of thresholds and the use of censoring rules will be addressed only marginally, since they are more extensively treated in other chapters. Finally, the chapter will include a presentation of multivariate models that are dealing simultaneously with greater specification of cycles in order to ensure automatically the turning points. The key example of euro area turning points composite indicators will be used to guide the reader through the chapter. If needed, more examples will also be provided to enhance the general scope of the chapter. Examples could concern the construction of turning points composite indicators for some European Union (EU) member States and, possibly, non-EU countries as well.

Chapter 16: Probit and logit approaches

This chapter will discuss in detail the use of regression techniques to construct turning points indicators. The chapters will focus mainly on logit and probit approaches, but other regression techniques may also be mentioned. This chapter will also discuss how to use these binary models to predict turning points in real time. The main characteristics of those approaches will be examined as well as the comparative advantages and drawbacks with respect to time series based approaches. Examples will be presented to demonstrate how indicators can be constructed and their performance in respect of detection of turning points.

Section 6: Indicators measuring economic growth

Chapter 17: An overview

The chapter will provide an overview of the subject treated in this section together with a description of the structure of its chapters. The section will present different approaches to the use of composite indicators to measure economic growth and fluctuations.

Chapter 18: Factor vector autoregressive (VAR) based models: automatic leading indicators

The chapter will present what is usually referred to as the automatic leading indicators (ALI) approach and will detail the purpose of the indicator, the variable selection and the estimation phases. Extension to the case of cointegrated variables in the data set will also be discussed. Some examples will help in describing the steps of construction and in illustrating the usefulness of the approach.

Chapter 19: Large-scale factor models

This chapter will describe in detail the approach to constructing composite leading indicators based on a large-scale factor model. The description will include the so-called Eurocoin approach and its variant as well as the development thereof at the European Central Bank over the last few years. References will also be made to other applications of this approach, such as that conducted by the European Commission in the early 2000s. The chapter will analyse the rationale of this approach and also present its advantages and drawbacks with respect to other approaches based on small or medium-sized factor models or on regression techniques. Examples will demonstrate how the various techniques under this approach work in practical cases.

Chapter 20: Regression, principal components and small-scale factors-based models

The chapter will describe the construction of composite growth indicators based on regression models. In particular, it will present the variable selection approaches and algorithms (e.g., least-angle regression (LARS)) as well as alternative regression models based on bridge regression or factor regression. VAR models will also be presented. The chapter will concentrate on indicators based on small and medium-sized models (the case of large-scale models will be presented in another chapter). So-called automatic leading indicator (ALI) models such as those of Camba-Mendez and Weale will not be presented since they will have already been discussed in another chapter. The evaluation criteria and tests will also be presented. Examples based on the gross domestic product (GDP) of the euro area and of some member States will also be provided to illustrate various approaches. It is possible that they will be complemented by some examples for non-European countries, if available.

Section 7: Validation

Chapter 21: An overview

The chapter will provide an overview of the subject treated in this section together with a description of the structure of its chapters. This section focuses on the questions, How useful are composite indicators? and What are the best approaches to evaluating composite indicators?

Chapter 22: Construction and usefulness of real-time databases

The main issues related to the construction of a real-time database and the usefulness of a real-time database in validating cyclical composite indicators (CCIs) will constitute the subject matter of this chapter.

Chapter 23: Real-time simulation

This chapter will describe how to build up a real-time exercise to validate CCIs and will examine vintage databases and pseudo real-time exercises.

Chapter 24: Validation by means of lagging indicators or other external information

This chapter will discuss the use of the leading-coincident-lagging structure to validate indicators, and the use of existing chronologies and other historical information in this regard.

Section 8. Guidelines for the construction of cyclical composite indicators

Chapter 25: Guidelines for the construction of cyclical composite indicators

This chapter discusses best practices in constructing CCIs and presents a step-by-step operational guide to constructing various types of CCIs.

Annex II

Handbook on economic tendency surveys

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Annex III

Handbook on rapid estimates

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Rapid estimates: conceptual and practical framework; guidelines

Section I: Generalities

Chapter 1: Introduction: objectives, definitions, costs and benefits of rapid estimates

The chapter will discuss the importance of timely economic information for policymakers, decision makers and analysts. It will also introduce the issue of the trade-off between timeliness and accuracy and proceed to identify the advantages and drawbacks of rapid estimates. It will also discuss the issue centring on rapid estimates as a means of producing timely information whenever the regular production process cannot meet timeliness-related requirements. The chapter will conclude with a general overview of the handbook.

Chapter 2: A system of rapid estimates: different products for different purposes

The chapter will present rapid estimates as constituting a family of statistical products that are clearly identifiable in terms of the statistical techniques used, the information set within which they are based, etc. The chapter will be based mainly on the findings contained in the glossary of rapid estimates; however, while the glossary (presented in an annex) will provide a more formal characterization of various products, the chapter itself will present the system of rapid estimates in a non-technical, synthetic and easily understandable manner.

Chapter 3: Forecasting and nowcasting macroeconomic variables: a methodological overview

This chapter will present an extended methodological overview of forecasting and nowcasting techniques, including the most recent developments. The chapter will be a technical one with strong statistical and economic content.

Section II: Key aspects of rapid estimates

Chapter 4: The trade-off between timeliness and reliability: the perspective of a statistical agency

This chapter will present in detail the trade-off between timeliness and accuracy. It will discuss the process of information acquisition by a statistical agency and link it to the degree of precisions of estimates. Theoretically speaking, by the end of the reference period over which an economic variable is measured, the information starts to become progressively available and the amount of that information is supposed to increase with time. At different points in time following the end of the reference period, it is possible to associate different estimates of the variable obtained conditionally, which are characterized by different degrees of precision, to the information available.

Chapter 5: Variables selection approaches, the information set structure and various typologies of rapid estimates

In this chapter, the focus will be on the structure and content of the information set used to derive various typologies of rapid estimates. The chapter will discuss the restrictions characterizing various information sets. For example, flash estimates are supposed to be based on an information set that cannot contain variables that are considered acceptable for nowcasting. Several examples should be provided to better clarify this point. In the second part, the chapter will present variable selection techniques, which can be useful when there is a need to reduce the dimensions of the variable space and/or to identify the most appropriate variable or combination of variables to be used.

Chapter 6: Model selection, model specifications and various typologies of rapid estimates

The specification of the statistical model is another key element differentiating various typologies of various estimates. The chapter will present the statistical models that are more appropriate to producing a given type of rapid estimates. For example, in the case of flash estimates, the statistical model chosen should be, as far as possible, similar to the one used in regular production while, in case of nowcasting, a wider variety of models (regression modes, time-series models, etc.) can be used. The second part of the chapter will present model selection techniques, which will be particularly useful in identifying the best-fitting model and in discriminating among competing models.

Chapter 7: Mixed-frequency models and rapid estimates

This chapter will present an overview of the most recent techniques allowing the modelling together of data available at different frequencies. Advantages and drawbacks of various techniques will be discussed. The chapter will also discuss the benefits for rapid estimates associated with the possibility of modelling together data available at different frequencies.

Chapter 8: Combining forecasting techniques and rapid estimates

In the case where competing models, based on different specifications and/or variables, can be identified and they are proved capable of producing good estimates, an improvement of the forecasting results can be achieved by combining their outcomes. Several combined forecasting techniques have been proposed in the literature to deal with a variety of practical cases. Furthermore, in a Bayesian framework, combining forecasting techniques is the most reliable means of producing density forecasts. The chapter will contain an overview of various combining techniques ranging from the classical ones to the most advanced.

Chapter 9: The aggregated versus the disaggregated approach to the construction of rapid estimates

This chapter will introduce the advantages and drawbacks of deriving rapid estimates at an aggregated level and starting from disaggregated sector information. This chapter will focus mainly on the geographical case; and the so-called direct, indirect and mixed approaches will be presented in detail. Most recent techniques such as the global vector autoregressive model (GVAR) will be discussed. The

chapter will be of particular interest in the context of the construction of rapid estimates of European aggregates and supranational aggregates (encompassing, for example, G20 and the OECD total) and to countries with a statistical system that is well decentralized at regional level.

Chapter 10: Quality assessment of rapid estimates

The chapter will emphasize the importance of a strong quality assessment of rapid estimates. Since rapid estimates constitute a product different from regular ones, they require an ad hoc process, which should be submitted to a standard quality assessment. Furthermore, the decision on the publication of rapid estimates should be based on a long-enough simulation period (possibly in real time). Finally, revisions of rapid estimates should be constantly monitored to uncover possible bias or other systemic behaviours.

Section III: Specific issues

Chapter 11: Data presentation issues

Since rapid estimates are a product different from regular ones, statistical agencies must be particularly careful to clearly distinguish rapid estimates from regular ones so as to preclude any user misunderstanding or confusion. The chapter will discuss the ways in which rapid estimates are presented and disseminated as well as the need for a clear flagging grammar for rapid estimates. Furthermore, the chapter will emphasize the need for the transparency of rapid estimates, which would entail the availability of detailed metadata files and the public availability of all methodological and empirical studies related to the construction of rapid estimates.

Chapter 12: Guidelines for rapid estimates

The chapter should offer a type of step-by-step guide to the compilation of various types of rapid estimates.

Annexes

Glossary (Eurostat)

Bibliography

Annex IV

Data template of short-term economic statistics

Indicator description		Tier	Periodicity
Set 1: National accounts			
1.1	Quarterly national accounts: flash GDP estimate	1	Quarterly
1.2	Quarterly national accounts: GDP full release		
1.2.1	By expenditure	1	Quarterly
1.2.2	By production	1	Quarterly
1.2.3	By income	2	Quarterly
1.3	Quarterly sector accounts	3	Quarterly
Set 2: Production and turnover			
2.1	Production index for industry, by major division (mining, manufacturing, electricity, water, etc.)	1	Monthly
2.2	Production index for construction	2	Monthly
2.3	Turnover index for retail trade by major division	2	Monthly
2.4	Turnover index for industry by major division	2	Monthly
2.5	Turnover index for other services by major division (excluding financial services and non-commercial services)	2	Monthly
2.6	New orders index for industry by major ISIC division (for those that work on order)	3	Monthly
2.7	New orders index for construction (building permits or housing starts)	2	Monthly
2.8	Commodity production (as relevant for country-level data on commodity production and other indicators of economic activity)	3	Monthly
	Agricultural products		
	Minerals		
	New car registrations/sales		
	New commercial vehicle registrations/sales		
	Tourist arrivals		
Set 3: Price indicators			
3.1	Consumer price index	1	Monthly
3.2	Producer price index	1	Monthly
3.3	Import price index	1	Monthly
3.4	Export price index	1	Monthly

Indicator description		Tier	Periodicity
Set 4: Labour-market indicators			
4.1	Unemployment	1	Quarterly
4.2	Unemployment rate	1	Quarterly
4.3	Employment total and by economic activity	1	Quarterly
4.4	Hourly wage rate	2	Quarterly
4.5	Hours of work	2	Quarterly
Set 5: External sector indicators			
5.1	Exports and imports (of goods and services)	1	Monthly
5.2	International investment position (IIP), specify balances and components	2	Quarterly
5.3	Official reserve assets	1	Monthly
5.4	External debt (by sector, maturity and foreign currency)	1	Quarterly
Set 6: Financial sector indicators			
6.1	Central bank net foreign assets	1	Monthly
6.2	Central bank domestic lending	1	Monthly
6.3	Central bank reserve money	1	Monthly
6.4	Depository corporations net foreign assets	1	Monthly
6.5	Depository corporations domestic lending	1	Monthly
6.6	Depository corporations broad money liabilities	1	Monthly
6.7	Other financial corporations balance sheet, assets and liabilities by sector	2	Monthly
6.8	Financial corporate profits	2	Quarterly
6.9	Financial corporate debt	2	Monthly
6.10	Others, as relevant: non-performing loans of depository corporations, capital adequacy ratios, other financial stability indicators, etc.		
Set 7: General government sector indicators			
7.1	Revenue	1	Monthly
7.2	Expense	1	Monthly
7.3	Net operating balance (= revenue − expense)	1	Monthly
7.4	Net acquisition of non-financial assets	2	Quarterly
7.5	Expenditure	2	Quarterly
7.6	Net lending/net borrowing (= revenue − expenditure)	2	Quarterly
7.7	Gross debt	2	Quarterly

Indicator description		Tier	Periodicity
Set 8: Household sector indicators			
8.1	Household disposable income	2	Quarterly
8.2	Household saving	2	Quarterly
8.3	Household debt	2	Quarterly
8.4	Other, as relevant: disposable income, debt service and principal payments, household debt, etc.		
Set 9: Non-financial corporations sector indicators			
9.1	Non-financial corporate profits	3	Quarterly
9.2	Non-financial corporate debt	3	Quarterly
9.3	Other, as relevant		
Set 10: Financial market indicators			
10.1	Interest rates, as relevant: short- and long-term money and bond market rates	1	Monthly
10.2	Exchange rates, as relevant: spot and forward markets	1	Monthly
10.3	Nominal and real effective exchange rate	1	Monthly
10.4	Stock market indicators	1	Monthly
10.5	Others, as relevant: spreads between lending and deposit rates, highest-lowest interbank rate; etc.		
Set 11: Real estate market indicators			
11.1	Residential property price index	2	Quarterly
11.2	New house sales	3	Monthly
11.3	Existing house sales	3	Monthly
Set 12: Economic sentiment			
12.1	Consumer confidence	2	Monthly
12.2	Business confidence	2	Monthly
12.3	Composite business cycle indicators		
12.3.1	Leading indicator	3	Monthly
12.3.2	Coincident indicator	3	Monthly
12.3.3	Lagging indicator	3	Monthly

Abbreviations: ISIC, International Standard Industrial Classification of All Economic Activities.

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