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Flash Estimates of GDP

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1. Introduction

Since the modern definition and establishment of national accounts, Gross Domestic Product (GDP) has always been considered the “indicator” able to resume the economic performance of a country. The coherent and consistent system that underlies GDP (the system of national accounts) provides the methodological foundations and the structured background that brings GDP to be the reference macroeconomic indicator.

In this sense, GDP is the ultimate product of the statistical chain that starts with the collection of basic statistics and, through the elaboration of national accounts, ends with the key macroeconomic indicators that are used for economic and monetary policy purposes.

The recent financial and economic crisis has generated pressure to have a rapid estimate of short-term macroeconomic indicators principally available to policy makers. Hence, official statisticians have focused on the provision of an early estimate of GDP.

This specific statistical need has stimulated a number of methodological and technical debates. Whilst the development of rapid estimates for GDP is, in itself, an interesting statistical challenge and a proven desirable target for policy makers, a standalone rapid estimate of GDP is only part of the ultimate goal.

Indeed, the relevance of a rapid estimate of GDP has to be conceived within a sequence of statistical products. All those products should anticipate the economic path, describe the economic momentum as soon as possible, analyse the economic situation by learn from the past in order to anticipate the future. Therefore, a rapid estimate of GDP is, in fact, a sequence of different estimates (statistical products) associated to the indicator that is commonly considered as the synthetic measure of the economic development.

At the same time, a standalone rapid estimate of GDP is not fully operational if it is not complemented by additional information on its components and interrelated with key macroeconomic aspects. In statistical terms, this reasoning leads to a set of key macroeconomic indicators. Therefore, a rapid estimate of GDP is to be considered in strict relation with a selected set of coordinated key macroeconomic indicators.

Nowadays, the idea of a statistical “dashboard” is increasingly becoming the reference for monitoring macroeconomic developments and concrete examples are already available such as the business cycle dashboard of CBS in The Netherlands, the business cycle tracer of Eurostat and the dashboard for the G-20 summit in South Korea.

The set of indicators covered by the dashboard is the output of the entire statistical process: from the collection and elaboration of basic statistics, through national accounts and beyond till key indicators. The dashboard, in our context, takes a short-term overall view of the economy.

The successful implementation of a rapid estimate of GDP requires, therefore, the definition of a short and medium term strategy with concrete targets, a well defined methodological framework (glossary, handbook, guidelines), a coordinated development with other key macroeconomic indicators (dashboard), the establishment of a sequence of statistical products related to GDP (among which the GDP flash estimates) – and, in an extended approach related to the dashboard, an appropriate communication supporting the establishment of a “rapid/flash estimate culture”.

This paper addresses these issues on the basis of the experience cumulated during the sequence of seminars on “Timeliness, Methodology and Comparability of Rapid Estimates of Economic Trends” in Ottawa and on “Early Warning and Business Cycle Indicators” in Scheveningen; the experience derived from the work done on flash estimates at European level; and the actions put in place to react to the statistical consequences of the financial and economic crisis.

2. GDP estimates: a sequence of statistical products

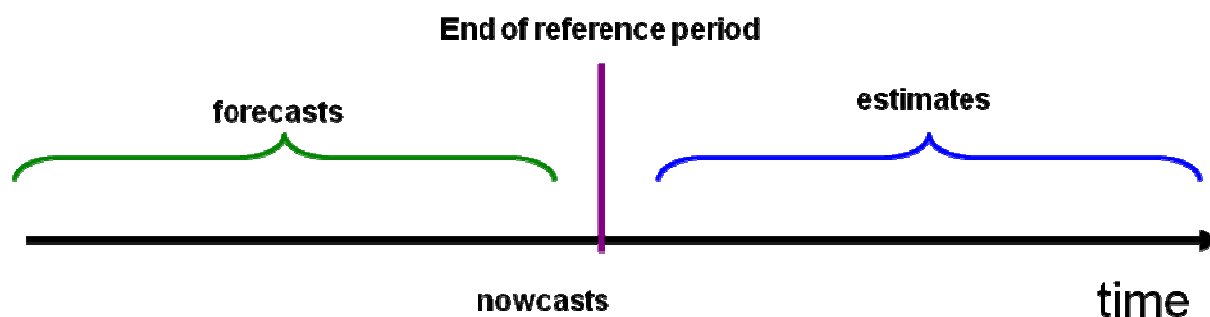
Information on GDP is provided almost daily both at national and international level. This offer of statistical products related to GDP (forecasts, nowcasts, flash estimates, regular estimates) involves different statistical producers (official national statistical authorities, international institutions, private organisations) and targets different audience.

The flash estimate of GDP is part of this sequence of estimates associate to GDP. Such a sequence is characterised by the different amount of basic information required in the compilation, the prominence given to the different aspects of quality (first of all the trade-off between timeliness and accuracy) and, in a cause-effect chain, the technical approaches used in deriving the different statistical products.

On the basis of common well established practices, the sequential statistical products to the estimates of quarterly GDP growth, are:

- Forecasts;
- Nowcasts;
- Flash/advanced estimates
- First estimates
- Second and successive estimates

Fig. 1: Sequence of statistical products associated to rapid estimates



From a contents-point of view, the amount of available basic statistical information increases when moving the point of observation – release of the statistical product – along the temporal axis.

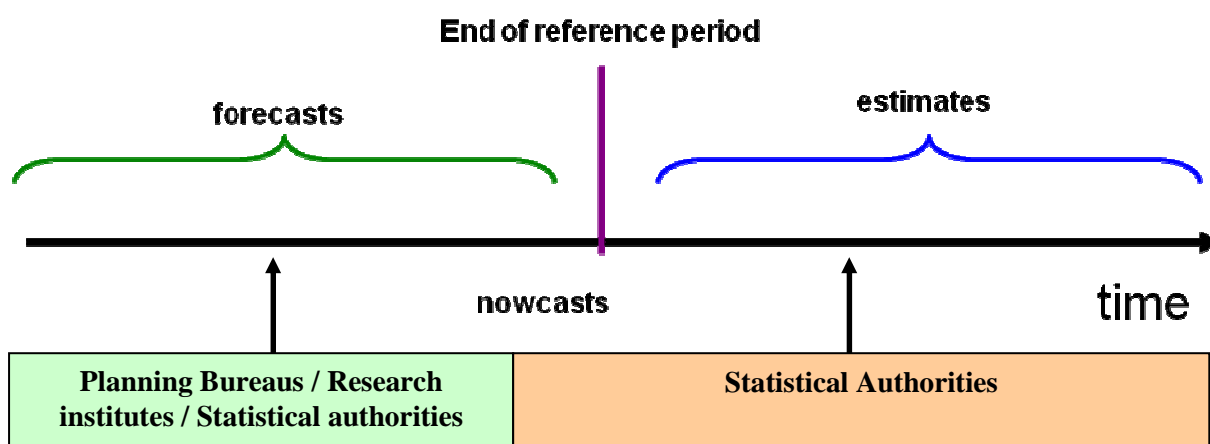
From the methodological point of view, the adherence of the compilation process of rapid estimates to the compilation process of regular estimates increases along the temporal axis; by consequence the process becomes less and less econometric/statistical techniques based.

In the case of flash GDP, the increased availability of basic statistics along the temporal axis strengthens the basis for the calculation of GDP and makes available estimations of the components, in particular for both the expenditure and output side. In parallel, more related key macroeconomic indicators are available and the reliability/accuracy of the estimates increases, whilst timeliness decreases.

The amount of basic information and/or use of econometric/statistical techniques used in the compilation qualifies the different statistical products associated to the estimation of GDP; these are the distinctive elements analysed in the glossary of rapid estimates. Furthermore, the forthcoming handbook on flash estimates intends to provide the necessary guidance for the specific product that flash estimates represent.

In addition, the movement along the temporal axis affects the nature of the “statistical actor” that produces the different statistical products. At the end of the chain stand national/international statistical institutes in charge of the compilation of the official GDP figures; at the beginning of the chain the key role is played by research entities and/or planning bureaus. The borderline is traced around nowcasts and flash estimates where a clear role for national statistical institutes is not fully evident. The forthcoming handbook on flash estimates should help to clarify the qualification of each of this products and the associated role for official statisticians.

Fig. 2: Who does what in rapid estimates?



3. A set of coherent macroeconomic indicators – the dashboard approach

The financial and economic crisis has produced an impact on statistics by pointing out the need for statistical information going beyond GDP and complementing it with other macroeconomic indicators more or less directly related to GDP.

In fact, a comprehensive analysis of several indicators offers an inclusive picture of the economic path and provides policymakers with a broader and coordinated information set to rely on for monetary and economic policy-decisions.

The recent developments of dashboards (The Netherlands, Eurostat, the G20 Korean dashboard) wants to give an answer to the increasing demand for coordinated sets of macroeconomic indicators. Within Eurostat the Principal European Economic Indicators (PEEIs) are evolving in this direction, as well as the first level of the template promoted by the UN Statistical Division as follow-up of the Ottawa-Scheveningen-Moscow seminars and the first level of the Principal Global Indicators as set up by the Inter Agency Group on Economic and Financial Statistic.

The dashboard approach has the advantage to be flexible and adaptable to diverse and evolving information needs by simply varying its composition. From a traditional macroeconomic point of view, information on prices, national accounts, labour market statistics, short-term statistics and external trade seems to represent the minimum amount of statistical information necessary to understand the developments of the economy.

Whilst the above mention coverage of statistical areas is the target for a comprehensive macroeconomic statistical framework, a dashboard has to focus on a selection of indicators derived from these statistical domains: consumer price index, GDP and key components (consumption, gross fixed capital formation, sectoral information), industrial production index, unemployment and employment, external trade, current account.

Furthermore, the composition of a dashboard should evolve along with the dynamics of the sequence of statistical products described in the previous section. Forecasts, leading indicators, flash estimates and regular estimates of the different macroeconomic indicators interact in providing a dynamic overview of the economic path, its components and their interconnections (a revision-dynamic dashboard – or, in other words, a real time dashboard).

In relation to the GDP flash estimates, the dashboard and its dynamic evolution, can offer the possibility to understand the context of a specific flash estimate (through the interconnections with the key macroeconomic indicators and selected GDP components), its accuracy (through the sequence of revisions), the prediction abilities of forecasts, nowcasts and leading indicators.

3. The statistical framework

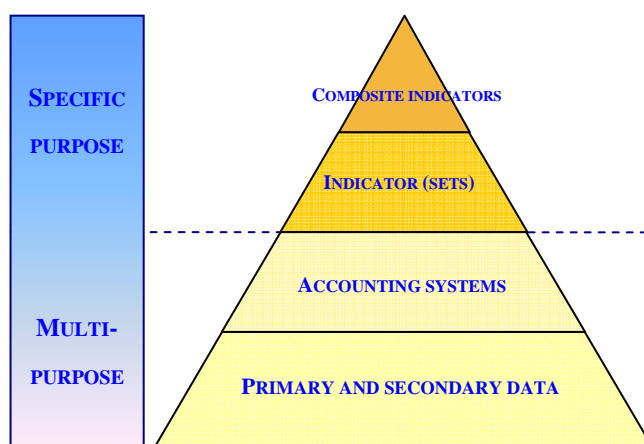
As already mentioned, GDP is the ultimate product of the statistical chain and has his roots deeply in such a chain. Other key macroeconomic indicators (those that should ideally be part of the dashboard referred to in the previous section) are in a similar position as GDP, but without the underlying framework offered by national accounts. Furthermore, the derivation of composite indicators is based on the set of key indicators.

The statistical framework behind the compilation of GDP, including the flash estimates of GDP, is therefore structured on the classical approach to the statistical production process:

- A first layer of **basic statistics** organised by statistical domain (the pillars): for example, business statistics, trade statistics, labour market statistics, etc.
- A second layer of “**accounts**” that combines the basic information collected and elaborated in the first layer: for example, national accounts.
- A third layer of **indicators** that are compiled in a coherent and consistent way on the basis of the information structured in the second layer: for example GDP, key macroeconomic indicators.
- A final layer of **composite indicators** that synthesise the information associated to the key indicators of the third layer.

This structure of the statistical information can be associated to a pyramid as illustrated in fig. 3.

Fig. 3: The pyramid of statistical information



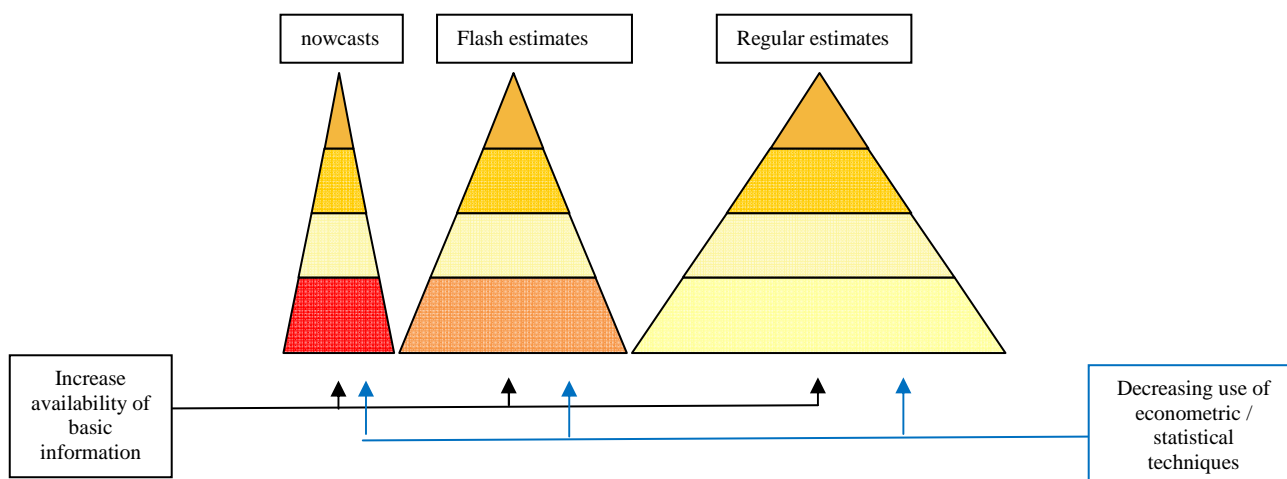
The pyramid conveys a key message on the statistical production process by visualising the dependencies in the statistical chain and highlighting the causes and effects that qualify the final products (quality of the final product depends on the quality of the input used to compile it).

The analysis and work conducted in the framework of the Ottawa-Scheveningen-Moscow seminars focus mainly on the last two layers of the pyramid, with a view on the accounting-systems layer (having in mind that the underlying statistical accounting system is the one established by the SNA).

In the case of rapid estimates (for GDP and/or for the set of indicators included in the dashboard) the statistical pyramid can be seen as a sequence of statistical pyramids (or a sequence of parent and children pyramids) that reflect the change in the composition of basic information/econometric-statistical techniques).

The logic behind the statistical pyramid drives the actions to be set for the development of a system of rapid estimates for key macroeconomic indicators. Indeed, the successful achievement of the targets for rapid estimates of GDP highly depends on the way the entire statistical framework necessary for the compilation of the GDP and its rapid estimates evolves. The lack of coordination could introduce an important risk for the achievement of the final targets. Therefore, in the coming years, efforts have to be concentrated on both the final target and on the consolidation of the basis of the pyramid so to get the necessary hard information for the compilation.

Fig. 6: The pyramid of statistical information and rapid estimates



4. How to move towards a system of rapid estimates for a set of key macroeconomic indicators

The first step to implement this strategy is to **define a coherent set of indicators** that addresses the requirements of policy makers.

The second step corresponds to define the different **typologies of statistical products** to be associated to the rapid estimates: forecasts, nowcasts, flash/advanced estimates, regular estimates and interlinks between them. This role is assumed by the glossary.

The third step is to reinforce **international cooperation** to steer the progress in this field through issuing guidelines (drafting of handbooks), fixing strategic short and medium term objectives and to set up an appropriate roadmap to be implemented and monitored. The handbooks will serve in this purpose.

In parallel, the **methodological background** has to be strengthened via coordinated developments, international seminars and by sharing best practices.

The pyramid of statistics described in the previous section highlights the importance of having the entire statistical production process moving towards clearly defined targets for the key indicators at the top of the pyramid. The achievement of the identified targets relies on the improvement at the level of basic statistics, accounts and, eventually indicators.

The following steps can be considered as constituent elements for a set of action plans/roadmaps related to short-term macroeconomic statistics:

What?

- consider the higher level of indicators as a **coherent set of indicators** produced by statistical authorities adequately covering the real sector and complemented by selected financial indicators.
- consider as a target a set of statistical products extended from forecasts to regular estimates.

How? – Preparatory actions

- run an **in-depth analysis of interlinks** between the production processes of the indicators to identify synergies, cross-links and potential coordinated developments, both at national and international level;
- **enhance coordination of the production processes of macroeconomic indicators**. Promote the "**data warehouse**" approach to the compilation of the indicators.
- trace the **statistical consequences** of the "domino effects" of financial and economic phenomena encompassing financial, economic and social statistics, taking into account the new challenges posed by a dynamic, global and fast-speed evolving society.
- build up on the experience acquired following the set up of the **economic-fiscal and structural surveillance** and the **European semester**.

How? – Strategic elements

- **fixing leading targets:** the development of the integrated set of indicators will require the establishment of a strategic integrated approach. Such an approach could be based on a threefold strategy:
 - > the **assessment of the current and future gaps** in the integrated set of indicators.
 - > the **identification of targets for single indicators** to match current and future users' and producers' requirements (coverage and quality).
 - > the **identification of targets for the indicators as an integrated dataset**.
- set-up an **implementation process** based on the **prioritisation of the identified targets**, the building-up of a **roadmap** and associated timetable, the definition of a suitable **progress-monitoring process**, the definition of appropriate **indicators** to measure the progress, the development of a **dedicated communication strategy**;
- **co-ordinate methodological and implementation aspects:** the interrelations among the indicators will become more evident; all developments of specific indicators will impact on most of the others and will have to be run in accordance (methodological developments, compilation practices, major policies, monitoring activities). The role of international institutions as coordinators of the entire process will increase encompassing new and more guidelines, recommendations and harmonised policies (handbooks, international guidelines, glossaries, common targets).

The proposed strategy has a double dimension: at national and international level. National developments should aim at offering a coherent national picture that evolves along time (sequence of statistical products on a set of coordinated indicators generated by the national pyramid of statistical information. International developments should aim at ensuring the comparability at international level and the coordinated development through the methodological and strategic guidelines.

5. Creating a culture of rapid estimates

Communication a key aspect in the strategy for shaping the statistical infrastructure underlying the rapid estimates approach.

The following dimensions of communication have to be taken into account:

- Efforts must be maintained or even increased to continue fostering a '**flash estimate culture**' among stakeholders and users through an adequate communication on the different aspects of data quality. An essential part of this part of communication involves informing users on the reliability of the different estimates of GDP, in particular flash estimates, which will help managing expectations. This requires using appropriate revision comparisons and indicators.
- The characteristics of the different estimates/statistical products associated to GDP (but also to the other indicators) have to be clearly explained to users so to create awareness of the meaningfulness and quality of such estimates – **transparency**. Therefore, statistical authorities have to make an effort in disclosing the methodologies used for the compilation of the different estimates, the amount of hard information used and the adherence to the regular production process.
- The coordination of the releases of the different sequence of GDP (and other indicators) estimates within **pre-defined release-windows** (ideally at the same time) has to be pursued so to generate expectations for each statistical product in specific moments in time.
- A clear definition of **what estimates what**, i.e. what each statistical product is aimed for and to what its performances have to be compared, will facilitate the quality assessment of the different estimates and, by consequence, the judgement of their suitability for different purposes (e.g., a good flash estimate of GDP is an estimate that is close to the first regular estimate and not to the final one, therefore its performance has to be assessed in this context).
- The idea of a set of **coordinated indicators** (dashboard) and the need to define short, medium and long term targets for the indicators as a set have to be promoted.

6. Summary

The main messages of this paper can be resumed as follows:

- Rapid estimates of GDP are important for economic and monetary policy purposes;
- Rapid estimates for GDP correspond to a sequence of interrelated statistical products fit for different purposes;
- Each statistical product is characterised by different requirements in terms of basic information (hard data), degree of use of econometric/statistical techniques, quality aspects (timeliness, accuracy, reliability);
- A standalone rapid estimate of GDP is not sufficient for policy makers: there is the need to link the rapid estimates of GDP to other macroeconomic indicators;
- The "dashboard" approach seems to offer the appropriate answer to the requirements of policy makers;
- A coordinated set of key macroeconomic indicators should be the target statistical tool for describing the economic path;
- Key macroeconomic indicators are the final product of the statistical production process (pyramid of statistical information);
- The definition of clear targets, an implementation strategy and a well established roadmap are of the utmost importance.
- Communication is paramount for establishing a "rapid estimates culture".