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Principal European Economic Indicators
Flash Estimates of European Aggregates

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Abstract

The early releases of the euro area and European Union quarterly GDP growth and of the Monetary Union Index of Consumer Prices (MUICP) are successful examples of flash estimates of key short-term European indicators. Both indicators have been developed in the framework of the Principal European Economic Indicators (PEEIs) approach, aiming to provide euro-area key short-term indicators according to well defined targets, notably in terms of timeliness. The monthly MUICP and the quarterly GDP flash estimates, released respectively at 0 and 45 days after the end of the reference period, successfully met these targets.

The methodology for the compilation of these flash estimates, the continuous monitoring of their quality, the coordination with the releases of the corresponding indicators at national level, a continuously enhanced policy for improvement, the coordinated actions towards the harmonisation at European level and a well targeted communication policy are the key factors that contributed to the performances and the credibility of these indicators.

This paper, beyond reporting the technical assumptions and features of the compilation of the flash estimates of quarterly GDP and MUICP, explores the above mentioned related aspects underlining the relevance of the co-ordination process at European level.

The analysis is complemented by some considerations on the availability of flash estimates and future developments.

1. Introduction

The increasing importance of the euro area as economic entity, the introduction of the euro, the establishment of the single market have contributed in the last ten years to increase the attention devoted to European statistics. In particular, economic and monetary policies are nowadays more co-ordinated and centrally designed in the European context and require more and more reliable and timely European statistics for an effective analysis of the economic behaviour.

The European Commission, and in particular Eurostat, played a major role in the process of giving concrete answers to the statistical requirements generated by the new context. It raised awareness of the statistical needs, put in relation major users and producers of statistical indicators and promoted initiatives inside the European Statistical System (ESS).

In March 2003, the Commission and the Council submitted to the European Council a comprehensive report on euro area statistics supporting the development of the Principal European Economic Indicators (PEEIs) and their full implementation by 2005[1]. The PEEIs cover a list of nineteen key infra-annual macro economic indicators for the euro area and the European Union, for which challenging improvement objectives were set (in terms of timeliness, coverage and other quality features). Five sets of PEEIs were defined: consumer prices, national accounts, business, labour market and external trade indicators (see Table 1).

In 2008, Eurostat reviewed the scope, timeliness and quality of the PEEIs in the light of the results achieved, the constraints encountered and the evolving users' needs for economic and monetary policy purposes. The review resulted in an amended list of indicators (including a new set on housing market indicators), revised targets and associated implementation strategy.

The list of PEEIs includes the most important non-financial key short-term indicators: Harmonised Index of Consumer Prices (HICP), Gross Domestic Product (GDP), Industrial Production Index (IPI), employment, unemployment. The main objective for the PEEIs, including the above mentioned key indicators, was the timely compilation of the European aggregates, moving the focus from Member States figures to the indicators for the euro area (and for the European Union). However, other quality aspects were integral part of the PEEI approach: reliability, accuracy, coordination, communication and methodological developments.

Developments in this area identified the steps to reinforce the compilation of PEEIs, including the promotion and compilation of early estimates for the monthly Monetary Union Index of Consumer Prices (MUICP) and the quarterly Gross Domestic Product (GDP): the flash estimates.

Nowadays, Eurostat regularly releases MUICP flash estimates at the end of the reference month and GDP flash estimates at 45 days after the end of the reference quarter.

This paper briefly presents the PEEIs approach, gives a definition of flash estimates in the context of European short-term statistics and describes how GDP and MUICP flash estimates are compiled.

[1] Communication of the Commission to the European Parliament and the Council on euro-zone statistics "Towards improved methodologies for euro-zone statistics and indicators".

Table 1: PEEIs – Summary benchmarking table

Extract from the "Status Report on Information requirements in EMU", Economic and Financial Committee, Nov. 2008.

Principal European Economic Indicators	Current release of European aggregates	Legal date of transmission from MS to Eurostat	Target date of transmission according to Com (2002) 661 final	Best 3 EU MS	Best 3 Euro Area MS
Set 1: Consumer Price Indicators					
1.1. Harmonised Consumer Price Index: MUICP flash estimate	0 (>95% EA)	--	0	-7 EL -2 BE -1 all others	-7 EL -2 BE -1 all others
1.2. Harmonised Consumer Price Index: actual indices	14-16 (100%)	30	17	5 BE 6 NL 7 CY, SI	5 BE 6 NL 7 CY, SI
Set 2: Quarterly National Accounts					
2.1. Quarterly National Accounts: First GDP estimate	45* (~95% EA, ~87% EU)	70	45	25 UK 28 LT 30 BE	30 BE 45* DE, EL, ES, FR, IT, CY, NL, AT, PT, FI
2.2. Quarterly National Accounts: GDP release with more breakdowns	64 (~97% EA, ~94% EU)	70	60	45 FR, NL, AT	45 FR, NL, AT
2.3. Quarterly National Accounts: Household and Company Accounts	123 (90% EA, 88%EU)	95/90	90	86 DE 87 SE, 88 UK	86 DE 91 AT, FR, NL, FI
2.4. Quarterly National Accounts: Government Finance Statistics	98 (100%)	90	90	36 CY 76 DE, SI	36 CY 76 DE, SI
Set 3: Business Indicators					
3.1 Industrial production index	42 (~93%)	40 large MS 55 small MS	40	25 PL 30 LT 35 EE, PT	35 PT 36 IE, ES
3.2 Industrial output price index for domestic markets	36** (~96%)	35 large MS 50 small MS	35	14 CZ, LT, UK	15 LU 18 DE, FI
3.3 Industrial new orders index	52 (~97%)	50 large MS 65 small MS	50 (40)	25 PL 35 EE 37 DE, RO, SK	37 DE 38 PT 39 IE, NL
3.4 Industrial import price index	[42]	45	45	15 DK 18 FI 24 NL, SE	18 FI 24 NL 26 DE
3.5 Production in construction	49 (~95%)	45 large MS 60 small MS	45	30 PL 32 SK, UK	38 DE, IE 43 FR, PT
3.6 Turnover index for retail trade and repair	37** (~99%)	30	30	24 UK 25 ES, LU, NL, PL	25 ES, LU, NL
3.7 Turnover index for other services	60 (~87%)	60	60	38 RO 42 BG, PT	42 PT 43 FI 45 NL
3.8 Corporate output price index for services	na	--	60	17 FI 39 SE 57 NL, UK	17 FI 57 NL 79 FR
Set 4: Labour Market Indicators					
4.1 Unemployment rate (monthly)	30 (~81% EA, 78% EU)	--	30	FI 24 DE 29	SE 22 FI 24 DE 29
4.2 Job vacancy rate (quarterly)	75 (67% EA, 78% EU)	--	45	16 UK 39 LU 44 FI	39 LU 44 FI 45 NL
4.3 Employment (quarterly)	74 (~85% EA, ~75% EU)	70	45	30 DE 44 LT, FI	30 DE 44 FI 45 FR, NL, AT
4.4 Labour cost index (quarterly)	74 (78% EA, 82% EU)	70	70	45 PT 64 SK 66 PL, RO	45 PT 67 AT, SI
Set 5: External Trade Indicators					
5.1 External trade balance: intra- and extra-MU; intra- and extra-EU	48 (100%)	40	46	26 SE 32 ES 33 LU	32 ES 33 LU 37 CY, MT

Legend: coverage of euro area in brackets na = not available

* 2.1 First GDP estimates: common release date at t+45 days

** Longer delay due to 1st May 2008 weekend.

[xx] available at xx days but not yet released at European level

2. The PEEIs approach

The PEEIs are the result of a dialogue between key users on short-term key economic indicators and producers of official statistics aimed to set up a statistical toolkit for monetary and economic policy purposes for the euro area.

The PEEIs approach is an example of successful coordination between users and producers of European short-term statistics. The key elements that ensured such a success are:

- the successful identification of the list of PEEIs through a wide-ranging consultation of the main users (Commission and ECB) and an analysis of the needs related to short-term statistics, taking into account producers' constraints.
- high attention from political bodies (EFC, Ecofin) to monitor the progress towards the targets through a regular reporting to them. The reporting focusses on the general progress achieved but also on the contributions at country level, highlighting weakness, delays but also rewarding major achievements.
- the increased emphasis on European targets instead of national targets.
- the direct involvement of high level management in both countries and institutions to steer and monitor the process.
- a regular and constant work at technical level to sustain the approach and promote the actions to achieve the targets (specific areas working groups, workshops, seminars, task forces).
- the adoption of a number of specific areas regulations supporting and translating in a legal form the PEEIs targets.
- methodological developments in specific areas (chain linking in quarterly accounts, quality aspects in consumer prices, etc.).
- general developments for improving methodology and compilation practices (guidelines on seasonal adjustment, first attempts to harmonise revision policies, establishment of flash estimates, …).
- benchmark with the short-term economic statistics of the main economic partners, in particular the United States.
- an enhanced communication strategy both for the PEEIs in general and in specific areas (for example, HICP or the website on PEEIs).

Among the different targets of the PEEIs strategy, flash estimates have assumed a specific and relevant role.

3. Flash estimates of European aggregates

Definition: *A flash estimate is an early estimate produced and published as soon as possible after the end of the reference period, using a more incomplete set of information than the set used for traditional estimates.*

The differences between flash estimates and traditional estimates can be defined according to the following dimensions:

- Timeliness: flash estimates are available earlier than the traditional estimates.
- Accuracy: there is a trade off between timeliness and accuracy. Flash estimates are in general less accurate than the traditional ones. However the loss in terms of accuracy is kept as small as possible.
- Coverage: the number of variables (breakdowns) covered by flash estimates is usually more limited than traditional estimates.
- Information available: flash estimates are based on a more limited set of information. Often the information related to the traditional estimates is not yet or fully available.
- Estimation method: due to the lack of direct information, flash estimates may rely more on econometrics.

The distinction between flash and traditional estimates is not always evident. In some cases, for example, flash estimates for one country may be available later than the traditional first estimates for another country.

On the other side, flash estimates differ from forecasts and leading indicators:

- flash estimates refer to a past reference period (i.e., already finished);
- flash estimates use the information related to the reference period;
- flash estimates rely, as much as possible, on the compilation techniques used for the successive traditional first estimates.

All these elements are intrinsic in the definition and compilation of the flash estimates of the European aggregates. In particular, both the GDP and the MUICP flash estimates rely on the same compilation techniques used for the regular estimates of such indicators.

The following sections describe the process of compilation of GDP, and quarterly national accounts, including GDP flash estimates, and HICP, including MUICP flash estimates, at European level.

4. Flash estimates of quarterly GDP

4.1. General issues

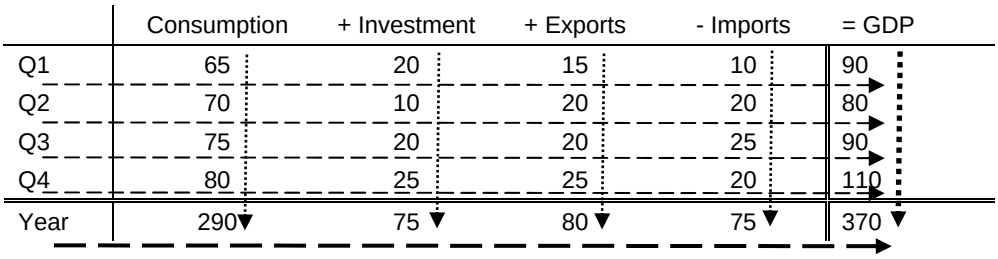
The target variable for the GDP flash estimates is the quarterly growth rate on the previous quarter of GDP for the euro area and the European Union, seasonally adjusted and working day corrected, in volume measures as published by Eurostat.

The compilation of the flash estimates of quarterly GDP for the euro area and the European Union is the first step in the compilation of quarterly national accounts at European level. To well understand the compilation aspects of the flash estimates, it is useful to go through the compilation process of the European aggregates of quarterly accounts.

All EU Member States compile quarterly accounts. European totals could thus, in principle, be obtained through the aggregation of the data from each Member State, as is the case for annual national accounts data. In the case of quarterly data however, the situation is somewhat more complicated. Some differences between the quarterly national account systems of EU Member States still persist, particularly as regards the quarterly coverage, publication delays, revision policies and seasonal adjustment procedures.

Eurostat estimates the quarterly European accounts from annual European accounts using Member States quarterly information as available. This approach allows to meet the requirements for timely quarterly accounts, in particular flash estimates of GDP.

Figure 1: GDP and expenditure components, quarterly and annual relations between components, current prices and previous years prices



Quarterly accounts have to be both time consistent with the annual accounts (for example the sum of quarterly values of the GDP must be equal to the annual value of GDP) and respect the accounting identities (for example, the sum of quarterly values of the GDP expenditure components should be equal to the corresponding quarterly value of GDP – special consideration has to be given to chain-linked volume measures). Fig. 1 illustrates these requirements for GDP and its expenditure components.

Time consistency is a fundamentally univariate problem since it involves only one variable, albeit at two frequencies (annual and quarterly). Accounting coherence and time consistency combined exhibit a

multivariate dimension, since they involve several variables linked by a contemporaneous constraint (in the case above, this is quarterly GDP which "constrains" the sum of the quarterly component values), with each of the variables subject to their own univariate temporal constraint.

Eurostat uses the approach described in the following section to compile three estimates of quarterly EU accounts at around 45 (flash estimate), 65 and 105 days after the end of the reference quarter, respectively.

4.2. Estimation procedure

The **information** available for the estimation of quarterly EU accounts is:

- the annual European totals (basically obtained by summation of Member States figures);
- the quarterly figures of those Member States for which data are available. The share of the total represented by the available countries depends on when and for which variable the estimation is done. In practice, for GDP, this figure ranges broadly between 75% and 99%.

The **basic principle of the estimation** is to break down the known complete annual EU aggregate into a quarterly figures by using the sum (or whichever aggregation is appropriate) of the only partially available quarterly country data as an indicator. This approach is known as temporal disaggregation of time series. In practice, this involves two steps:

1. For a given variable, say GDP, a quarterly indicator is constructed by summing up across Member States as far as available. By default, no explicit estimations are done for missing values (or whole series) of Member States in the construction of the quarterly indicator series. There are some exceptions to this rule, for instance in the case that a country is available for the non-seasonally adjusted indicator, but no seasonally adjusted series is available. Eurostat may then apply a seasonal adjustment to the national series in order to increase the coverage of the indicator. None of these Eurostat estimates of national figures are published.
2. The known annual value of the variable is disaggregated into a quarterly series which gives the correct annual sum while reflecting the quarterly movements of the indicator. This is done by applying the Chow-Lin method, relating the unknown quarterly figures to some quarterly indicator series by a regression model. For quarters of the current year, the Chow-Lin method provides an extrapolation based on the quarterly indicator using the model estimated from that time span for which the annual series and the indicator are both available.

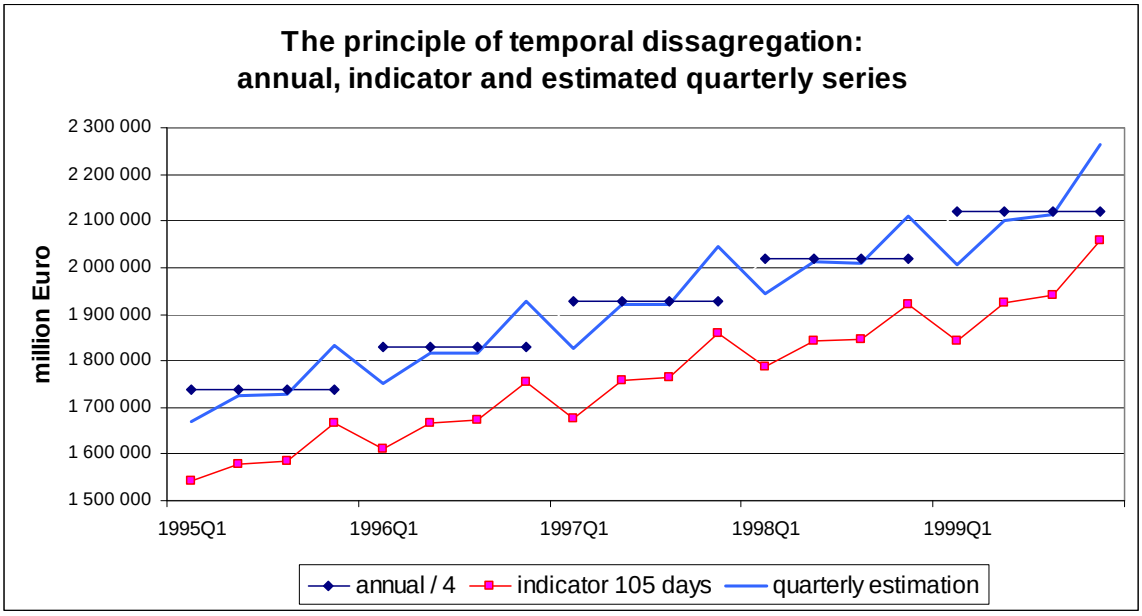
For getting reliable results from this temporal disaggregation, it is important that the quarterly indicator series is a plausible proxy for the path of the variable of interest. This certainly is the case for the EU estimations, where the indicator series are a true part of the target series and for which coverage is usually good, i.e. the available countries represent more than 80% of the EU total.

Fig. 2 illustrates the approach. It shows annual GDP at current prices for the EU25 for a five-year period, the unadjusted quarterly indicator series available at the second regular GDP estimate (at t+105 days), and the resulting estimate of the quarterly GDP series derived from the former two. Please note that the annual values have been divided by four to present them on the same scale as the quarterly series.

The two steps as stated above are performed for GDP and for all other series to be estimated. Estimations are calculated independently for seasonally adjusted and unadjusted quarterly series in cases where both series are available. The procedure uses all information (i.e. quarterly and annual time series for all countries) available at the time of the estimation. A Member State for which no quarterly data is included at all will still have an influence on the quarterly European aggregate because its annual values enter into the model.

Univariate estimates of national accounts components other than GDP are then aligned to GDP in a multivariate temporal disaggregation approach (Denton method).

Figure 2: Temporal disaggregation approach



By virtue of their construction, the quarterly estimations are then both coherent with regard to accounting constraints and coherent in time with the annual accounts.

The summation of national values into the indicator series requires them to be expressed in a **common currency**, i.e. the ECU/Euro as for the annual aggregates. For current price estimations, quarterly exchange rates are used. For the members of the euro area, these rates are equal to the irrevocable euro conversion rates for all quarters after their entry into the euro area, but they are the ECU rates for earlier quarters. For chain-linked volumes, the average exchange rate of the reference year applies to the whole series. For data at previous year's prices, average exchange rates of the previous year apply.

There are no fixed weights attributed to each country in the estimation of the European totals, weights are derived implicitly in the course of the estimation process and vary between variables. They will largely coincide with the share each country has in the annual total. It should however be noted that the indicators' movement for the latest quarter, where results may still be missing for a number of countries which are otherwise available for all previous quarters, will largely depend on the quarterly figures of those countries available at the time of the estimation. The influence of those countries reporting early is thus somewhat bigger for determining the very latest quarter's figure.

4.3. Specific issues

- **Seasonal adjustment** of European series is currently not done directly by applying an adjustment routine to raw European data, but rather **indirectly** by estimating the seasonally adjusted series from seasonally adjusted Member States data. Of course, this means that the final result is a mix of several adjustment procedures as MS use various procedures for seasonal adjustment).
- For most, but not all, Member States the seasonal adjustment comprises also a **working-day correction** because differences in the number of working days between subsequent quarters can significantly affect growth rates. The EU quarterly accounts, being derived via an indirect adjustment approach, hence include a partial working-day correction. Given that all of the bigger Member States apply a working-day correction, no significant working-day effect should remain in the EU quarterly accounts. The unadjusted EU quarterly accounts are coherent in time with the published EU annual accounts. The adjusted EU quarterly accounts do contain a working-day correction, and hence their sum excludes the annual working-day effect. In practice, annual accounts including a working-day correction are used for estimating quarterly adjusted series in the disaggregation technique outlined above. These annual accounts including a working-day correction are not published by Eurostat (but can be reproduced from summing the quarterly series).

- Quarterly EU accounts are released according to the following **revision policy**: three releases are published each quarter: the first at 45 days is a flash estimate and consists of GDP growth for the latest quarter only. No other series are revised, nor is GDP growth for previous quarters. The flash is followed by a first regular release at around 65 days, covering GDP and its basic breakdowns (only domestic employment is released at around 75 days instead). All EU quarterly and annual accounts series for all reference periods are open to revision with this release. The second regular release is scheduled at around 105 days after the end of the quarter, adding some more detailed breakdowns for the new quarter, and again all quarterly and annual series are opened to revision.
- The effects of the **euro area enlargements** on the compilation process are resumed in a different composition of the target indicators (sum of the national figures of the available countries of the euro area) and the annual benchmarking series. Therefore, whilst potentially all different compositions of the euro area could be derived and disseminated, Eurostat follows in this area the general approach to the dissemination of European statistics in case of enlargement, i.e. dissemination of time series for the euro area in its more recent compositions (headline figure – backward calculated as long as possible) and evolving composition (time series corresponding to the effective composition year by year).
- **Lack of basic information for flash estimates**: the compilation process of flash estimates of the euro area (European Union) GDP at 45 days after the end of the reference quarter, relies on the availability of flash estimates of GDP for the major European countries (Germany, France, Italy, Spain and the United Kingdom). Since the establishment of the European GDP flash estimates more and more countries made their flash estimates available for the 45 days release[2]. Nevertheless, occasionally GDP flash estimates for some of the major euro area countries might be not available in time. In order to ensure a continuity of publication at a pre-determined date and to avoid further delays, the flash methodology foresees the estimation of the quarterly GDP figures for the missing major countries by a regression model based on one or more available national indicators (mainly the Industrial Production Index).

5. Harmonised Index of Consumer Prices (HICP)

5.1. General issues

The HICPs are EU Consumer Price Indices calculated according to a harmonised approach and a single set of definitions. The key HICP for the euro area is the Monetary Union Index of Consumer Prices (MUICP), which is the aggregate HICP covering the countries within the euro area. The MUICP is based on national HICPs.

The MUICP is calculated by Eurostat using statistics provided by the Member States on price changes and the consumption patterns of consumers within their economic territories. The aggregation across countries uses country weights for 'household final monetary consumption expenditure'.

Eurostat also publishes each month a 'flash estimate' for the MUICP. This flash estimate is based on historic series, results from the first countries to publish their national estimates and on energy price data. It gives an early indication of what current month's MUICP is likely to show when the full data set is available.

The HICPs aim to cover the full range of final consumption expenditure for all types of households in order to give a timely and relevant picture of inflation.

Conceptually the HICPs are 'Laspeyres-type pure price indices' rather than 'cost of living indices', this reflecting their key role in measuring price convergence and price stability. Thus the HICPs can be viewed as measuring, broadly, the average price change for maintaining an expenditure pattern of some earlier base or reference period – rather than as being founded on economic concepts of consumer utility.

The coverage of the HICPs is defined in terms of 'household final monetary consumption expenditure', by reference to the national accounts concepts of the European System of Accounts (ESA 1995).

[2] The following EU Member States release GDP flash estimates in time for the release of the euro area and European Union flash estimates: Belgium, Czech Republic, Estonia, Greece, Spain, France, Italy, Cyprus, Lithuania, the Netherlands, Austria, Portugal, Slovakia and the United Kingdom.

Some practical consequences of the use of 'household final monetary consumption expenditure' are:

- the geographical and population coverage is of all purchases by households within the territory of a country, those by both resident and non-resident households (the so-called 'domestic concept').
- the HICPs cover actual prices paid for goods and services in monetary transactions, including indirect taxes and excise duties, and net of reimbursements (for example government reimbursements for health or child care). Imputed prices are excluded, such as imputed rents for owner-occupiers. Furthermore, some special fees and taxes paid to government for licenses will be excluded (when there is no equivalent good or service received in return).

The prices measured are those actually faced by consumers, so for example they include sales taxes on products, such as Value Added Tax, and they reflect end-of-season sales prices.

5.2. Estimation procedure

With the start of Stage III of Economic and Monetary Union Eurostat is required to calculate the Monetary Union Index of Consumer Prices (MUICP) following Council Regulation (EC) No 2494/95. The MUICP is the key instrument for monitoring price stability in the euro area. The MUICP provides the official measure of inflation in the euro area for the European Central Bank.

The MUICP is **calculated** as a weighted average of the HICPs of euro-area countries. The index is computed as an annual chain index allowing country weights to change each year as well as allowing for inclusion of additional countries into the euro area. The country weights used are based on national accounts data referring to the year ending two calendar years prior to the current year. In order to ensure a meaningful chaining, they are updated to December prices of the latest calendar year prior to the current one. For example, the country weights used in 1998 are national accounts data for 1996 price-updated to December 1997 using the HICPs of the participating countries for December 1997.

The country weight of a Member State is its share of Household Final Monetary Consumption Expenditure (as measured under ESA95) of the euro area total. Expenditure expressed in the former national currencies is converted into euro using the irrevocably locked conversion rates. The MUICP is calculated as a weighted average of the euro area regardless of its composition.

Each month Member States transmit the primary index series, i.e. the HICP and its sub-indices, to Eurostat with at least four decimal places, for example 99.5321 or 102.4567 taking 2005 = 100. Member States also transmit each January the new set of sub-index weights to Eurostat to a degree of detail of at least 1 in 1000. Eurostat uses the sub-index weights at the same level of detail as reported by Member States, and the country weights at a level of detail of 1 in 1000. The primary index series, i.e. the HICPs and the sub-indices, the sub-index weights and the country weights constitute the primary series.

The MUICP and its sub-indices are calculated as a weighted average of the HICPs and their sub-indices of the participating countries of EMU. The indices are computed by Eurostat from the primary series, rounded to and published with one or two decimal places, depending on the Member State. The MUICP and its sub-indices rounded to two decimal places are defined as primary series.

Any derived statistics are calculated from these primary series: monthly and annual rates of change; annual average index numbers and annual average rates of change (= annual average inflation rates). Rates of change are published with one decimal place and the annual average index numbers are published with one or two decimal as the primary index series.

According to Article 10 of Council Regulation (EC) No 2494/95, Member States are obliged to transmit the HICP results to Eurostat within a time period not exceeding thirty days from the end of the calendar month to which the indices relate. In Article 11 it is stipulated that Eurostat shall publish the transmitted HICP results together, with the MUICP results, within a period not exceeding five working days after the end of the period within which the data from Member States are to be transmitted to Eurostat.

Currently, HICPs are published around 15 days after the end of the reference month and the flash estimate of the MUICP, based on provisional data transmitted by Member States to Eurostat, on the last working day of the reference month.

To compute the **MUICP flash estimates**, Eurostat uses early price information relating to the reference month from Member States for which data are available as well as early information about energy prices.

The flash estimation procedure for the MUICP combines historical information with partial information on price developments in the most recent months to give a total index for the euro area. The estimation model is flexible with respect to available data but requires some information about price developments in the reference month. Currently, the MUICP flash estimate usually includes early price information representing approximately 95% of the euro area total consumption expenditure weight.

5.3. Specific issues

- No **seasonal adjustment** is directly applied in the calculation of the MUICP.
- The **revision policy** of HICPs is regulated Commission Regulation (EC) No 1921/2001 which states that HICPs may be revised in specific cases (mistakes, new relevant information, or following provisional results) directly by Member States and, for the remaining cases, subject to prior approval of the Commission.
- With reference to **enlargement** of the euro area, the headline time series correspond to its evolving composition. Assume that in January 2001 Y more countries joined, increasing the number of participants from X to X+Y. The MUICP is then be extended to include X+Y Member States. This is achieved by linking in December 2000 the MUICP for the X+Y participating countries to the MUICP for the former X participating countries The MUICP at January 2001 reflects then the price changes from December 2000 in the whole euro-area comprising X+Y Member States. The country weights change in the link month December reflecting the new shares of final consumption expenditure of households in the EMU total.

6. Performances of flash estimates

The credibility attached to flash estimates (of GDP) strongly depends on the ability of the flash estimates to be a good “estimate” of the first regular release figure. Since the compilation of the euro area GDP and MUICP flash estimates is based on the availability of flash estimates of Member States, the accuracy and reliability of the euro area aggregates derives from the accuracy and reliability of countries flash estimates (see Figure 3 and Figure 4).

Revision analysis is the natural instrument to assess the performances of the flash estimates.

Eurostat, in its news releases, regularly provides information about the performances of the GDP flash estimates (see Box 1) and on MUICP flash estimates (see Box 2).

Several studies have been conducted on the performances of euro area flash estimates, the most recent one being a European Central Bank's article on GDP flash estimates (ECB Monthly Bulleting, April 2009). These studies generally conclude that that the description of economic developments provided by the flash estimate does not differ significantly from that provided by the first full release published later, which means that – despite the additional delay – the new basic information that has become available does not generally require a significant revision of the flash estimate published earlier. This shows that improvements in timeliness do not necessarily come at the expense of lower reliability.

Figure 3: Release of the first estimates of real GDP growth (2001 and 2007)

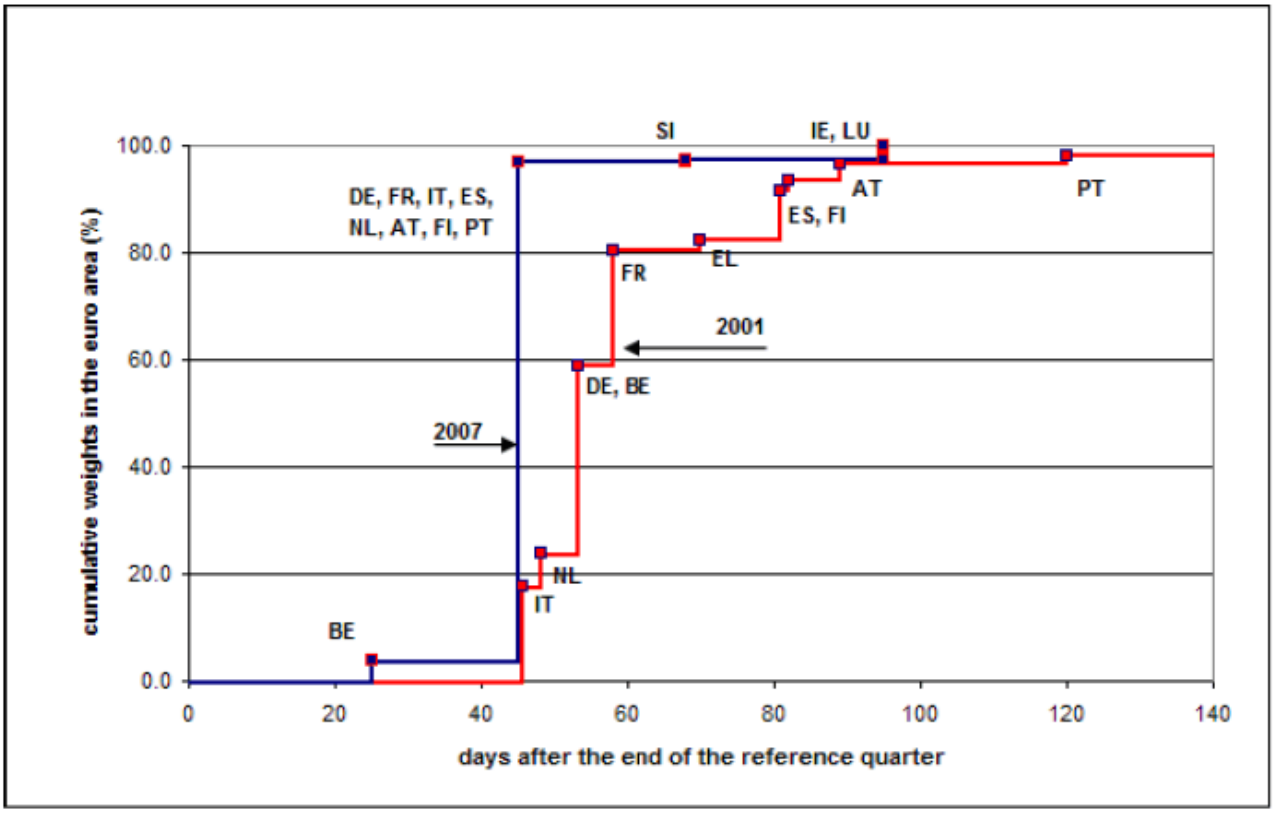
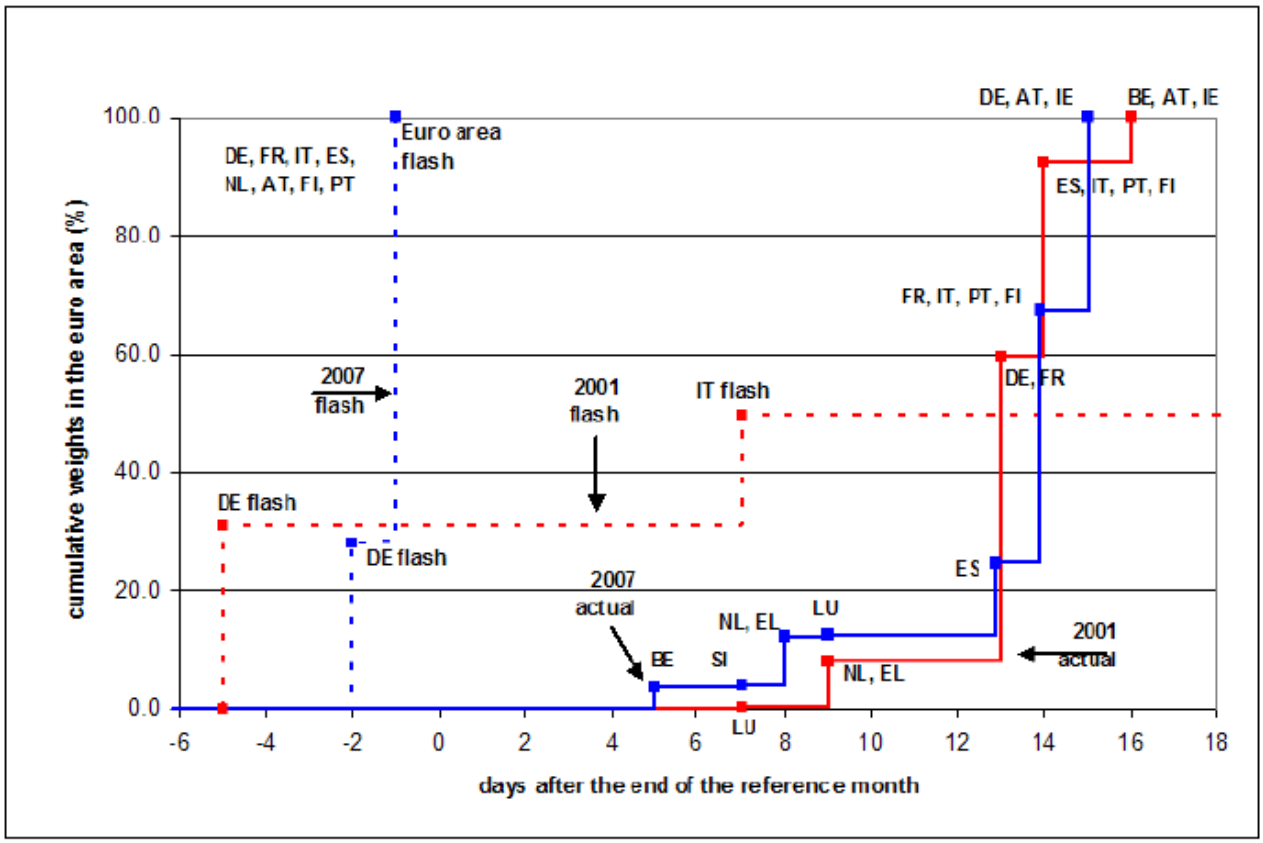


Figure 4: Release of flash estimates and actual indices of HICP (2001 and 2007)



Box 1: Extract from the (Eurostat) euroindicators news release on the flash estimates of GDP for the fourth quarter of 2008 (13 February 2009)

Summary quality information

European quarterly national accounts are compiled in accordance with the European System of Accounts 1995 (ESA95). The flash estimate of 2008 Q4 GDP growth presented in this release is based on Member States' data as available, directly covering 97% of EA15 GDP (89% of EU27 GDP). For more details of the flash methodology please refer to News Release 55/2003 of 15 May 2003.

Simulations and previously published flash estimates have shown the flash estimation procedure to be reliable. Over the last 32 quarters, the flash estimate of GDP growth on the previous quarter for the euro area (EA12) when compared to the following first regular release has led to an average revision of less than 0.01 percentage points. It correctly anticipated the acceleration or deceleration of growth 28 times. The value of the growth rate was correctly anticipated 27 times and differed by ±0.1 percentage points 5 times.

With this flash estimate, euro area and EU GDP figures for earlier quarters are not revised, so the growth rates till the third quarter 2008, published in News Release 4/2009 of 8 January 2009, remain unchanged. All figures presented in this release are subject to further revision with the two regular estimates of GDP for the fourth quarter 2008, scheduled for 5 March 2009 and 7 April 2009. First estimates for National Accounts employment in the fourth quarter 2008 are scheduled for 16 March 2009.

Box 2: Extract from the (Eurostat) euroindicators news release on the flash estimates of euro area inflation for April 2009 (30 April 2009)

Computation of flash estimates

Euro area inflation is measured by the Monetary Union Index of Consumer Prices (MUICP). To compute the MUICP flash estimates, Eurostat uses early price information relating to the reference month from Member States for which data are available4 as well as early information about energy prices.

The flash estimation procedure for the MUICP combines historical information with partial information on price developments in the most recent months to give a total index for the euro area. No detailed breakdown is available. Experience has shown the procedure to be reliable (17 times exactly anticipating the inflation rate and 7 times differing by 0.1 over the last two years).

6. Future developments

One of the targets in the coming years of the general process of coordination of the European short-term key indicators (the PEEIs) is to promote flash estimates and to improve their quality and availability. This objective fits in the review of the scope, timeliness and quality of the Principal European Economic Indicators (PEEIs) in the light of the results achieved in recent years, the constraints encountered and the evolving users' needs for economic and monetary policy purposes.

The flash estimates of the GDP and MUICP for the euro area and the European Union are a successful example of coordination among EU Member States, of methodological improvement, of reaction to the requirements imposed by the evolving economic context. The challenge of the coming years is to further anticipate the release of the flash estimates of the European GDP to be more in line with the benchmark represented by the advanced release of the GDP for the United States (at 30 days after the end of the reference quarter) maintaining the accuracy and reliability currently achieved.

Eurostat is working in this direction in the framework of the general strategy of PEEIs in the medium term. Quarterly national accounts objectives will evolve around a 30-60-90 days approach that will offer to users flash estimates of GDP at 30 days after the end of the reference quarter, main expenditure, output and income components of GDP at 60 days and a complete set of quarterly accounts, including financial and non-financial accounts for institutional sectors at 90 days after the end of the reference quarter.

To achieve these objectives a strong coordination between different areas of national accounts and between national and European national accounts are needed, combined with appropriate methodological developments.

From a technical point of view, a GDP flash estimate at 30 days will require the application of more econometric oriented techniques, whilst, concerning the basic information to be used in the flash estimation process, alternative indicators, more quickly available, will have to be sought. Preliminary studies already started in this field.

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