Note to Tables 5.1

Chapter 5 – prices, output, demand and labour markets

Section 5.1 – HICP, other prices and costs

Table 5.1.1 Harmonised Index of Consumer Prices

In October 1998 the Governing Council of the ECB agreed on the main elements of the single monetary policy. In this context, the Governing Council decided that price stability would be defined on the basis of the Harmonised Index of Consumer Prices (HICP) for the euro area. In addition, as clarified in May 2003, the Governing Council adopted a quantitative definition of price stability defined as a year-on-year increase in the HICP for the euro area of *"below but close to 2.0"*.[1] In addition, the Governing Council stated that *"price stability was to be maintained over the medium term".*

1. Development of HICP methodology since 1992

Article 1 of the Protocol on the convergence criteria referred to in Article 121 of the Treaty establishing the European Community requires price convergence to be measured by means of the consumer price index *on a comparable basis*. Given the differences between national consumer price indices (CPIs), in 1993 the European Commission (Eurostat) initiated the development of the HICP methodology in cooperation with all the EU national statistical institutes responsible for the production of CPIs at the national level.

In October 1995 the EU Council Regulation on HICPs (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995R2494:EN:HTML) was adopted. It provides the framework for harmonisation and states that *"HICPs shall be considered to be comparable if they reflect only differences in price changes or consumption patterns between countries"*.

The first monthly HICP data were released for January 1997 with backdata to January 1996 (estimates for 1995 were also made available). Since then, several more detailed harmonisation measures have been developed and implemented.

2. The HICP for the euro area

Since May 1998 the Monetary Union Index of Consumer Prices (MUICP) has been published each month for the Member States participating in the Monetary Union.

[1] See the ECB's press release of 8 May 2003 and the May 2003 issue of the ECB's Monthly Bulletin.

The MUICP is the weighted arithmetic average of the HICPs for the euro area countries. The euro area HICP covers the Member States which have adopted the euro in the time period to which the data relate. When a country joins the euro area, the national HICP for that country is included in the euro area HICP using a chain index formula. The MUICP is computed as an annually chain-linked index with country weights changing each year. The weight of each country is its share of private domestic consumption expenditure in the euro area (the source for these shares is the National Accounts). As National Accounts results become available with a time-lag, the weights relate to the penultimate year. Country weights for the years 1995 to 1998 are converted into euro using the fixed euro conversion rates applied from January 1999. Eurostat publishes the most recent country weights with the release of the January data every year.

The HICPs are published according to the COICOP/HICP classification (classification of individual consumption by purpose adapted to the needs of HICPs). The European Commission (Eurostat) publishes the HICPs for 12 main Divisions, 40 Groups and 103 Classes. Additional aggregates compiled from COICOP/HICP sub-indices, including the components shown in Table 5.1.1 of the ECB's Statistics Bulletin, are also available.

Since end-2001, the European Commission (Eurostat) has published flash estimates of the HICP, normally at the end of the reference month. These are derived from first national HICP results for Germany, Spain and Italy, as well as other countries, including confidential and provisional data and information on energy price developments in the euro area countries.

HICPs are generally revisable. The HICP of the current month is provisional and may change when the following month's data are published.

As of January 2006, the MUICP and its components are compiled from unrounded national index levels and are published to two decimal places. The annual rates of change are calculated from the published indices and published to one decimal place.

Some of the HICP data shown in Table 5.1.1 are seasonally adjusted by the ECB using X-13 and JDemetra+. The overall HICP is seasonally adjusted indirectly by aggregating the following seasonally adjusted components of the euro area total: processed food, unprocessed food, industrial goods excluding energy, and services. The energy component is not seasonally adjusted since identifiable seasonality is not present. Where applicable and appropriate, euro area HICPs are also adjusted for calendar effects. For additional information, see the box entitled "Harmonised Index of Consumer Prices - Easter effects and improved seasonal adjustment", Economic Bulletin, Issue 3, ECB, 2016. Seasonal factors are revised at annual intervals or more frequently if required. The methodology is described in detail in the document entitled "Seasonal adjustment of monetary aggregates and Consumer Price Indices (HICP) for the euro area" (http://www.ecb.europa.eu/pub/pdf/other/sama0008en.pdf), which is available on this website. Eurostat publishes all HICPs for the Member States, the euro area and the European Union approximately 16 days after the end of the reference month.

All data shown in Table 5.1.1 are available in CSV files that can be downloaded from this website (http://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html). HICP

data for the euro area and for EU countries can be accessed using the ECB's interactive inflation dashboard (http://www.ecb.europa.eu/stats/prices/hicp/html/inflation.en.html). Further information on data sources, publications and methodology can also be obtained from Eurostat's dedicated HICP website (http://ec.europa.eu/eurostat/web/hicp/overview).

3. Stages in harmonising the HICP methodology

The harmonisation of consumer price indices is based mainly on a set of EU legislative acts, as well as on commonly developed recommendations and guidelines. An overview of the main measures which have been agreed can be obtained via the following links:

- http://ec.europa.eu/eurostat/web/hicp/legislation
- http://ec.europa.eu/eurostat/documents/3859598/5926625/KS-RA-13-017-EN.PDF/59eb2c1c-da1f-472c-b191-3d0c76521f9b?version=1.0

Further harmonisation measures currently being discussed concern, in particular, the harmonisation of quality adjustment procedures and the coverage of owner- occupied housing expenditure in the HICP.

References

"Report from the Commission to the Council on Harmonization of Consumer Price Indices in the European Union", European Commission, COM (1998) 104 final; COM (2000) 742 final (http://aei.pitt.edu/47577/1/COM_(98)_104_final.pdf).

"Seasonal adjustment of the monetary aggregates and HICP for the euro area", European Central Bank, August 2000 (https://www.ecb.europa.eu/pub/pdf/other/sama0008en.pdf).

"Compendium of HICP reference documents", European Commission (Eurostat), 2013 Edition (http://ec.europa.eu/eurostat/documents/3859598/5926625/KS-RA-13-017-EN.PDF/59eb2c1c-da1f-472c-b191-3d0c76521f9b?version=1.0).

"Harmonised Indices of Consumer Prices (HICPs). A Short Guide for Users", European Commission (Eurostat), March 2004 (http://ec.europa.eu/eurostat/documents/3859598/5884877/KS-BE-04-001-EN.PDF/0051a64b-490c-4fd7-8bf1-1dcae31f4970?version=1.0).

Table 5.1.2 industry, construction and property prices

The **industrial producer price indices (for total industry excluding construction)** are published by the European Commission (Eurostat). They measure the changes in ex-factory selling prices and cover all sales on the domestic markets. This implies that internal euro area cross-border trade is excluded. For periods before 1999, the results are based on indices in national currencies. The euro area aggregate is a weighted arithmetic average of national indices. Country weights are derived from domestic turnover in 2005. Industrial producer prices are covered by the EU Council Regulation concerning short-term statistics and related implementing regulations. Price indices include specific taxes excluding VAT.

As a general rule, euro area aggregates are compiled by Eurostat if at least 60% of the weight for a given variable and a given activity is available, although in practice the country coverage in much higher for the producer price indices. Any country statistics that are unavailable are estimated. Producer price indices are not seasonally adjusted.

The data shown in the Statistics Bulletin are compiled according to the international classification NACE Rev. 2 (columns 1 and 2: sections B to E; column 3: section C). The totals in columns 4 and 7 are compiled from the *Main Industrial Groupings* (columns 5, 6, 8 and 9, and columns 8 and 9, respectively), which are derived from the detailed results for NACE Rev. 2 divisions and groups. As regards the composition of the aggregates, it should be noted that the manufacture of computers and peripheral equipment, together with the manufacture of motor vehicles, are fully included in *capital goods* and not in *durable consumer goods*. The series for *total industry excluding construction and energy* differs in its coverage of activities from the series for *manufacturing*, as it excludes the manufacture of coke and refined petroleum products, but does include non-energy mining and quarrying activities.

Eurostat currently publishes the data approximately five weeks after the end of the reference month.

The **input price index for construction** (column 11) is published by the European Commission (Eurostat) and refers to changes in prices of labour and materials used for constructing residential buildings. The euro area aggregate is a weighted arithmetic average of national indices. The data are not seasonally adjusted.

Statistics on output prices in *construction* are not harmonised across the euro area. Differences include the definition of the prices measured, the types of buildings covered and the frequency of the data. Construction price statistics are covered by the EU Council Regulation concerning short-term statistics.

All the previously mentioned data are available in CSV files that can be downloaded from the "Statistics" section of this website (http://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html). More detailed data and national results can be obtained from Eurostat's website (http://ec.europa.eu/eurostat/statistics-explained/index.php/Industrial_producer_price_index_overview), where further information on data and data sources can also be found.

The euro area **residential property price indicator** and **experimental indicator of commercial property prices** are compiled by the ECB is an aggregation of

heterogeneous national indicators of varying quality using GDP shares as weights.

The underlying national **residential property price data** differ in terms of:

- *geographical coverage*, with some referring only to property transactions in large cities or selected regions within the country concerned;
- *property-type coverage*, with some excluding newly constructed dwellings or other types of dwelling;
- the *types of price observation collected*, e.g. transaction prices obtained from land registries/notaries, agreed prices quoted in mortgage loan applications, prices advertised by real estate agents and values as assessed by professional property values;
- *the time at which a price observation enters the index*, reflecting the variety of data sources and the long time period over which a house transaction may be concluded.
- *quality adjustment*, i.e. how the observed prices are adjusted for changes in the quality or composition of the observed properties.

The impact of these methodological differences on the reliability of the euro area residential property price indicator is difficult to judge. Given the influence of local factors in property markets, national indicators which focus on developments in a limited sub-set of the whole market may give misleading results. The lack of appropriate quality-adjustment methods can have both short-term effects, owing to changes in the types of property transacted from one period to the next, and long-term effects, due to gradual improvements in the quality of the housing stock.

The methodology and caveats underlying the experimental index of **commercial property prices** is described in full in an expanded box in the ECB Monthly Bulletin of February 2014 (see http://www.ecb.europa.eu/pub/pdf/mobu/mb201402en.pdf , page 54). The preferred data are provided by national statistical institutes or other sources that have been endorsed by the respective national central bank. Where these are not available, a commercial data source is used by the ECB to compile euro area and EU aggregates. Countries that are not covered by either national data sources or the commercial dataset are assumed to show the same development as the GDP-weighted average of the countries for whichindicators of commercial property prices have been compiled.

References

Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics, Official Journal of the European Communities, L 162, 5 June 1998, pp. 1-15.

Commission Regulation (EC) No 586/2001 of 26 March 2001 on implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of Main Industrial Groupings (MIGS), Official Journal of the European Communities, L 86, 27 March 2001, pp. 11-14.

Commission Regulation (EC) No 586/2001 of 26 March 2001 implementing Council Regulation (EC) No1165/98 concerning short-term statistics as regards the definition of variables, Official Journal of the European Communities, L 86, 27 March 2001, pp. 18-28.

Table 5.1.3 commodity prices and deflators of gross domestic product

Data on **oil prices** refer to Brent crude oil spot prices. The prices are published by Bloomberg and are shown in euro per barrel (ECU per barrel for periods before 1999).

The **import-weighted and use-weighted non-energy commodity price indices** are calculated by the ECB. They both have the same commodity coverage, use the same set of underlying single commodity price series – 34 commodities in total distributed among 18 food categories and 16 non-food categories, agricultural raw materials and metals – but use different weighting structures. The single commodity price series are downloaded from Bloomberg and Datastream and are converted into US dollars and into euro (into ECU for periods before 1999).

The weights of the import-weighted index currently refer to the average raw material imports of euro area countries from countries outside the euro area for the period 2004-2006. Data are taken from Eurostat's external trade statistics (COMEXT database). This import-weighted index is designed to assess price developments in imported commodities and to assist in the forecasting of external trade (volumes and prices).

The weights of the use-weighted index refer to the estimated value of euro area domestic demand, or "use", taking into account information on imports, exports and the domestic production of each commodity (for the sake of simplicity, as well as owing to the lack of appropriate and comprehensive data sources, inventories are assumed to remain stable over the observed period) and they also refer to the average of the period 2004-2006. This weighting scheme is more commensurate with the consumption patterns of globally traded commodities in the euro area and provides information about pressures on consumer prices stemming from global commodity price movements (assuming that the prices of domestically produced commodities move in parallel with those on the world market). Several data sources are used to calculate the weights: Eurostat's agricultural statistics, external trade statistics (COMEXT) and by-product manufacturing statistics (PRODCOM); and the statistics compiled by the Food and Agriculture Organisation of the United Nations (FAOSTAT).

The overall import-weighted index and use-weighted index and their sub-indices are calculated by applying the fixed-weighted Laspeyres formula. The long time series are derived by linking the old price indices (using weights from 1999 to 2001) with the new ones in December 2002; the index base is 2000=100. Indices based on commodity prices in US dollars and euro are calculated. The results are not seasonally adjusted.

The euro area deflators of GDP are calculated by the ECB. From 1999 onwards, developments in the deflators have been identical to those of the ratio of data in current prices to chain-linked volume data expressed in ECU/EUR, as shown in Table 5.2.1 of the Statistics Bulletin. For periods before 1999, they differ because the implicit euro area deflators derived from data expressed in ECU have been corrected by a coefficient. In this way any exchange rate effects are removed from the deflators because otherwise they can distort the measure of domestic price developments.

The purpose of this correction is to obtain what would have been the aggregated euro area deflator developments had no exchange rate movements been observed between the national currencies used before the introduction of the euro.

Since euro area data in current prices become available later than the data in volumes, the deflators may lag information on GDP growth by a quarter (*cf.* Table 5.2.1).

The deflators of *exports* and *imports* cover goods and services, and include internal cross-border trade in the euro area.

All the previously mentioned data are available in CSV files that can be downloaded from the "Statistics" section of this website (http://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html).

References

Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union, Official Journal of the European Union, L174/1, 26 June 2013, p. 1.

Table 5.1.4 unit labour costs, compensation per employee and labour productivity

The **unit labour cost and its components** are calculated by the ECB based on published ESA 2010 national accounts data for GDP and compensation of employees and on the ECB estimates of employment shown in Table 5.3.1.

The **unit labour cost for the whole economy** is defined as compensation per employee divided by real gross domestic product per employed person.

Compensation per employee in the whole economy is defined as wages and salaries plus the employers' social security contributions per person receiving compensation.

Labour productivity in the whole economy is defined as real gross domestic product per employed person.

All the previously mentioned data are available in CSV files that can be downloaded from the "Statistics" section of this website (http://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html).

Table 5.1.5 hourly labour costs

The **labour cost indices** measure the changes in labour costs per hour worked in industry (including construction) and market services. The methodology (definitions, coverage, breakdowns, etc.) of these quarterly indicators is laid down in two EC regulations (see below). Labour costs include gross wages and salaries (in cash and kind, including bonuses) and other labour costs (employers' social contributions plus employment-related taxes paid by the employer less subsidies received by the employer). Apart from the overall index, indices are available to show the breakdown by labour cost component (wages and salaries, other labour costs) and by economic activity.

The labour cost indices for the euro area are compiled and published by Eurostat on the basis of data from the national statistical institutes, delivered within 70 days of the end of the reference period. Euro area and EU aggregates are obtained as weighted averages of the national data, using compensation weights from the year 2008. Data are adjusted for the variations in the number of working days. Data are also available in seasonally and working day-adjusted formats.

The **index of negotiated wages** is a measure of the outcome of collective bargaining in terms of basic pay or salary (i.e. excluding bonuses) within the euro area. Changes in the index refer to the implied average change of a monthly wage or salary. The underlying data used to calculate the euro area aggregate are non-harmonised national indicators.

All the previously mentioned data are available in CSV files that can be downloaded from the "Statistics" section of this website (http://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html). For the hourly labour cost index, more detailed data and national results are available from Eurostat's NewCronos data bank. Recent data can also be obtained from Eurostat's website (http://ec.europa.eu/eurostat/web/labour-market/labour-costs/main-tables), where further information on data and data sources can also be found.

References

Regulation (EC) No 450/2003 of the European Parliament and of the Council of 27 February 2003 concerning the labour cost index, Official Journal of the European Communities, L 69/1, 13.03.2003, p. 1., implemented by Commission Regulation (EC) No 1216/2003 of 7 July 2003, Official Journal of the European Communities, L 169, 08.07.2003, p. 37.