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# ESS-ESCB

## Quality assessment report on statistics underlying the Macroeconomic Imbalance Procedure



EUROPEAN CENTRAL BANK  
EUROSYSTEM

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## I. EXECUTIVE SUMMARY

The Macroeconomic Imbalance Procedure (MIP) is part of the European Semester, which provides a framework for the coordination of economic policies across the European Union. The European Statistical System (ESS) and in particular Eurostat, together with the European System of Central Banks (ESCB) and the European Central Bank (ECB), contribute to the harmonised production of data used in the context of the MIP: they provide the necessary expertise to guarantee the statistical quality of indicators and their availability, in a continuous effort to reflect economic and social development. It is of the utmost importance that statistics underlying the MIP procedure remain fit for purpose in this highly relevant policy context where imbalances are identified and countries' progress monitored based on the best possible data quality.

European macroeconomic statistics are developed, produced and disseminated within their respective spheres of competence by the ESS and the ESCB. Close cooperation on quality assurance of statistics underlying the MIP is ensured via the implementation of the Memorandum of Understanding (MoU) signed between Eurostat and the ECB DG Statistics in November 2016.

This sixth joint annual quality report presents a transparent description and assessment of the quality of the statistics underlying the MIP indicators. This report benefited from comments of the Committee for Monetary, Financial and Balance of Payments statistics<sup>1</sup> (CMFB).

This year's report comes at a time of profound disruption to economies worldwide from the COVID-19 pandemic caused by the Coronavirus (SARS-CoV-2). The report is focused on the assessment of annual data referring to previous years, before the pandemic struck, so that there is no direct impact of the pandemic on this report.

Nevertheless, it is important to understand – with relation to future MIP-relevant statistics – that the COVID-19 outbreak is currently impacting on the ability of statistical authorities to collect and process data in the traditional manner. The European Statistical System and the European System of Central Banks are working to ensure the continuation of statistical production and dissemination according to schedule; the extent to which the quality of MIP-relevant statistics may have been impacted will be assessed in the next report. As to statistics up to 2019, this report concludes that the macroeconomic statistics produced by the two systems are of sufficient coverage, comparability across countries, quality and timeliness to ensure an effective macroeconomic surveillance and therefore to support the MIP, whilst describing areas for further improvement in each of these dimensions.

When looking at the quality of the statistics for the current cycle, the following main features are worth highlighting:

In the EU, a regular and comprehensive quality assessment of national **GDPs** is in operation in the frame of GNI being used for own resources purposes, of which GDP constitutes the most predominant part. In addition to that, the results of the third annual quality reporting exercise under the ESA 2010 methodology were published in December 2019. The highlight of data transmissions in 2019 was the fact that 18 Member States carried out coordinated benchmark revisions of national accounts.

In the compilation of **Balance of payments (BoP) and International investment position (IIP) statistics**, asymmetries in bilateral flows and stocks remain a concern, as well as the level and statistical properties of some national errors and omissions. Generally, the valuation and recording of Foreign Direct Investment (FDI) transactions, positions and income needs further work to ensure an adequate and harmonised implementation of the statistical guidance. Moreover, for some countries efforts are still needed to improve the quality of data for Special Purpose Entities (SPEs) and decisively address the outstanding inconsistencies between BoP/IIP and the “Rest of the World” sector in financial accounts and non-financial accounts.

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<sup>1</sup> Council Decision 2006/856/EC of 13 November 2006 establishing a Committee on monetary, financial and balance of payments statistics. OJ L 332, 30.11.2006, p. 21.

Concerning **Unit labour cost**, data are generally of good quality with some issues remaining, notably for employment data where time series present break flags for three countries and the national concept instead of domestic concept is used by one country.

In terms of availability of data for **Housing price statistics**, one country does not deliver data as required by Commission Regulation (EU) No 93/2013, with Eurostat continuing to use the Residential Property Price Index published by the central bank for the MIP exercise.

Certain areas for improving the reliability of **Financial accounts statistics** have been identified in several countries, including the improved coverage of the liabilities of other financial institutions (OFIs), elimination of some national inconsistencies between the annual and quarterly datasets, the reconciliation of the “Rest of the World” sector in financial accounts with the comparable figures in the BoP/IIP domain, the reduction of (vertical) discrepancies with non-financial sector accounts, and improved recording of the distinction between consolidated and non-consolidated data for the non-financial corporations sector.

The quality of the **Government finance statistics** is assessed in the context of an enhanced quality assurance mechanism around the Excessive Deficit Procedure (EDP); in case of quality concerns, Eurostat expresses reservations on data reported in official EDP notifications<sup>2</sup>.

The overall accuracy of **Labour market statistics** is considered as high and data are highly comparable among Member States.

Whenever specific quality issues arise for a particular country, those are brought up in section II of this report.

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<sup>2</sup> <https://ec.europa.eu/eurostat/web/government-finance-statistics/legislation>

## II. GENERAL CONSIDERATIONS ON THE QUALITY OF THE STATISTICS UNDERLYING THE MIP

### II.1 MACROECONOMIC STATISTICS – AT THE CORE OF MIP INDICATORS

The MIP headline indicators are derived from macroeconomic and financial statistics produced by the European Statistical System (ESS) and the European System of Central Banks (ESCB). They are mostly based on data collected under European Union legislation. The present report finds that these statistics are of sufficient coverage, quality and timeliness to ensure an effective multilateral macroeconomic surveillance and support MIP proceedings.

The ESS, composed of Eurostat and the national statistical institutes (NSIs) and other national authorities (ONAs)<sup>3</sup>, and the ESCB, composed of the ECB and the national central banks (NCBs), operate under separate legal frameworks reflecting their respective governance structures and cooperate closely when designing their respective statistical programmes.

The two systems<sup>4</sup> have been producing macroeconomic and financial statistics for many years within their respective spheres of competence and continuously apply statistical quality assurance mechanisms to ensure that these statistics are in line with international statistical standards and reliable and comparable across EU Member States. Such statistics have been the basis for economic and monetary policy decisions of the Union over many years and are also used by international organisations such as the IMF and the OECD in their surveillance reports.

The purpose of the report is to present in a principle-oriented manner both common and diverse quality issues related to all statistics underlying the MIP. To this end, in this part II of the document, the focus is on information at statistical domain level, while Annex I contains more in-depth information by MIP scoreboard indicator, including the quality criteria most relevant for the MIP process: (i) institutional issues, (ii) the compilation process, and (iii) the quality of the statistical output, focusing on its accuracy, reliability and comparability across countries and across time. Annex II and III list the MIP Scoreboard and auxiliary indicators.

As the indicators for the MIP are derived from available macroeconomic and financial statistics, such as national non-financial and financial accounts, balance of payments statistics, international investment position, and also prices and labour market statistics, this report will focus on the quality of these statistics. Accordingly, the report also outlines areas of the underlying statistics that may need further quality enhancements<sup>5</sup>.

### II.2 EUROPEAN LAW AND QUALITY ASSURANCE PROCESSES AS DETERMINANTS OF STATISTICAL QUALITY

The assessment presented in this ESS-ESCB Quality Assessment Report reflects essential quantitative and qualitative information from the comprehensive quality assurance frameworks for macroeconomic statistics of the ESS and the ESCB, in particular from domain-specific quality reports.

Securing the quality of macroeconomic and financial statistics is a central contribution of the ESS and the ESCB. The two systems share similar principles referring to the quality of statistical processes and outputs, as well as the institutional environment. These principles are reflected in the European Statistics Code of

<sup>3</sup> [https://ec.europa.eu/eurostat/documents/747709/753176/20190607\\_List\\_other\\_national\\_statistical\\_authorities\\_IT.pdf/f3c3bddf-c378-4203-92a2-48d0dd789f3d](https://ec.europa.eu/eurostat/documents/747709/753176/20190607_List_other_national_statistical_authorities_IT.pdf/f3c3bddf-c378-4203-92a2-48d0dd789f3d)

<sup>4</sup> The institutional framework for the production of European statistics is set out in the Treaty of the European Union (TFEU) and in Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics, *OJ L 87, 31.3.2009, p. 164*, and in Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank, *OJ L 318, 27.11.1998, p. 8*.

<sup>5</sup> Within the reporting structure monitoring the quality of statistics underlying the MIP, this ESS-ESCB Quality Assessment Report is accompanied and complemented by domain specific quality reports prepared on a national level by the Member States and on an EU/euro area level by Eurostat and the ECB.

Practice and the ESCB Public Commitment on European Statistics respectively and are very similar to those established on a global basis by the UN, the IMF and the OECD.

The macroeconomic statistics underlying the MIP indicators are regulated by EU legislation, including in most cases procedures for quality assurance and monitoring. For balance of payments statistics, international investment position, national non-financial and financial accounts, EDP and government finance statistics, prices, and labour market statistics, the statistical legislation in force already provides for regular domain-specific quality reports on the statistical data. Reports often accompany inventories containing a description of the sources and methods applied in the collection of these statistics.

The **quality assurance framework**, developed jointly by the ESS and the ESCB, follows a three-level structure.

The *first level* (level 1; the present document) aims at enhancing the communication on quality assurance of MIP statistics towards the Council and European Parliament, policy makers and the public at large with key messages on the reliability and comparability of such statistics. This level draws on the information gathered in the next two levels.

The *second level* consists of domain-specific quality reports produced by Eurostat and the ECB summarising the main findings for the euro area and/or the EU Member States. These reports assess the underlying compilation process and its robustness, describe its legal basis and evaluate whether the statistics are in line with international statistical standards. They reflect comprehensive expert assessments on whether the statistics are fit for each of the broader purposes for which they are intended, including their comparability across Member States. The quality assessment is based on, among other sources, the input coming from national, domain-specific quality reports. For national accounts, after the adoption of an implementing act,<sup>6</sup> an annual quality reporting by Member States started in 2017, to be extended progressively by 2021, including data underlying the MIP indicators, too.

On the *third level*, depending on the domain, national quality reports (self-assessments) are produced by the institution compiling the national statistics. Most of these reports are voluntarily published by Member States on the CMFB's website.<sup>7</sup>

By focussing the quality assurance on the underlying macroeconomic and financial statistics that are used for many purposes rather than only for the MIP indicators, the quality of the data is ensured independently of possible adjustments in the scoreboard indicators.

## II.2.1 IMPLEMENTATION OF THE MEMORANDUM OF UNDERSTANDING BETWEEN EUROSTAT AND THE EUROPEAN CENTRAL BANK/DG STATISTICS

On 7<sup>th</sup> November 2016, Eurostat and DG Statistics of the European Central Bank signed a Memorandum of Understanding on the quality assurance of statistics underlying the Macroeconomic Imbalance Procedure<sup>8</sup>. Within its scope are two statistical datasets where many Member States have designated their National Central Banks for producing the datasets, or major parts of it:

- Balance of payments and International investment position statistics
- Financial accounts

The Memorandum of Understanding establishes a mutual recognition of the respective ESS and ESCB quality assurance frameworks, sets out the steps to be taken during the MIP indicators production process, based on a timetable to be agreed annually by Eurostat and the ECB/DG-Statistics, and establishes that, with the

<sup>6</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1413797867069&uri=CELEX:32014R0724>

<sup>7</sup> <https://www.cmfb.europa.eu/main-topics/mip-quality>

<sup>8</sup> <http://ec.europa.eu/eurostat/documents/10186/7722897/Final-signed-MoU-ESTAT-ECB.pdf>

support of NSIs and NCBs, Eurostat and the ECB/DG-Statistics may undertake analysis of the output quality and consistency of the datasets with related statistical domains, including joint visits to Member States.

Eurostat and ECB/DG-Statistics have been fully implementing the MoU since its agreement, including regular comparisons of the relevant data in the Eurostat and ECB databases and their harmonisation, the implementation of the three level quality reporting system and, joint visits by Eurostat and the ECB/DG Statistics to countries. Country visits started in 2017 with Greece and Belgium, followed by Luxembourg and Poland in 2018. In 2019, Germany, Ireland and Malta were visited, and there was a visit to France in January 2020. Visits are by now carried out on the basis of a well-established framework and have demonstrated their potential for identifying concrete actions for the improvement of the quality of MIP underlying statistics.

While the respective quality assessment frameworks have been mutually recognised by the MoU and are consistent in terms of concepts and principles, ECB DG-S and Eurostat, with the support of the CMFB, worked with the objective of harmonising the quality reporting on BoP/IIP and financial accounts statistics. In 2017, an agreement was reached on the structure of these reports and on the set of quality indicators used. The full implementation of the alignment of the reports was achieved in the course of 2018 (on reference data for 2017). While due to the different data coverage and legislation it is currently not possible to have one common report, its structure, the indicators and the findings included in the Eurostat and the ECB reports are harmonised. ECB DG-S and Eurostat reports assess the quality of the data according to the following dimensions: relevance, accuracy, timeliness/punctuality, accessibility and clarity, comparability and coherence. Furthermore, a special section (box) focusing on the quality assessment of the data used for MIP purposes has been introduced.

### II.3 HIGH QUALITY AND COST-EFFECTIVE MACROECONOMIC STATISTICS

By striking the right balance between timeliness and detail, the ESS and the ESCB aim to produce fit for purpose macroeconomic and financial statistics in a cost-effective manner. To strike this balance, statisticians, in close liaison with users and reporting agents and prior to developing new statistics or imposing additional reporting requirements, have to undertake a '**merit and cost evaluation**' considering the **trade-offs** between the timeliness, accuracy, reliability, detail and cost of macroeconomic statistics.

The **frequency** of the statistical production, which is in most cases regulated, has also to be taken into account: high frequency macroeconomic statistics ensure the appropriate timeliness and are generally compiled with less detail not to overburden respondents, while more detailed statistics become available less frequently and with a longer time-lag.

Another usual arbitrage is between the degree of **reliability** and **accuracy** on the one hand, and **timeliness** of publication on the other hand: the shorter the length of time for collecting and controlling the statistical output before publication, the less strong the accuracy and reliability of the statistics will be (all other things being equal). Revisions have to be considered a normal phenomenon to increase progressively the quality of data, in particular its accuracy. Revisions are also regularly analysed in order to improve source data, statistical processes and outputs.

Moreover, the quality is also linked to the compilation methods that are available and used. For example, to compile some monthly balance of payments data, surveys may be confined to reporting agents of a certain size, and the statistical compilation process combines information collected from reporting agents via statistical surveys, administrative data and necessary estimations with statistical techniques and expert judgment.

Data derived from business accounting or administrative sources, which are closely related to the phenomena under observation, may often lend itself as the most solid primary data for certain purposes, if deviations from statistical standards are appropriately addressed. In other cases, surveys can be appropriate or even unavoidable in certain statistical areas, which are by definition less exhaustive, but the risk of error is

mitigated by statistical techniques to the largest extent possible. While a more extensive use of censuses instead of sample surveys may enhance the accuracy and reliability of certain statistics, it would also increase the costs and the reporting burden, in particular for small and medium-sized enterprises. For example, the reporting obligations on cross-border transactions (for balance of payments purposes) may only be imposed for transactions or positions above certain thresholds to limit the reporting burden; this is however expected to affect only marginally the accuracy and reliability of the final output. In addition, the estimate of some variables may only be achieved through modelling, with a more significant role for expert judgment.

The accuracy and reliability of macroeconomic statistics are also influenced by the level of qualified human and financial resources involved in the statistical work. For example, as quality checks typically require contacting the reporting entities in order to verify the provided statistical information, the lack of resources may enable to perform this task only on a limited scale, with a possible impact on the accuracy and reliability of the statistics. Recent experience in some countries points out at the impact of economic globalisation on macroeconomic statistics and the difficulties in collecting data from multinational enterprises. The sharing of information and data between statisticians is a challenging issue and raises legal questions, while the path of globalisation of very large non-financial groups is accelerating.

In short, the quality framework must take account of the wider statistical context in which these data are produced; a context in which timeliness, reliability, accuracy, and other quality parameters must be carefully balanced in the choice of collection and compilation methods. Otherwise, Member States could be obliged to adjust their collection and compilation methods in a manner that can no longer be considered balanced or cost-effective for the wider set of statistics from which the MIP relevant data are derived. Except in cases of urgency, where new requests have to be fulfilled in a very timely manner – for instance in times of crisis – it is therefore recommended to undertake impact or case studies before introducing new compulsory statistical requests.

## II.4 MAIN OBSERVATIONS

The majority of the statistics underlying the MIP indicators are based on the European System of National Accounts (ESA 2010) and a European framework rooted in the Balance of Payments and International Investment Position Manual (BPM6). These frameworks are methodologically consistent and guarantee a high level of comparability across EU Member States, which is an important foundation to support multilateral surveillance under the MIP.

National Statistical Institutes and National Central Banks will have to continue deploying the necessary resources to step up efforts for consolidating the compilation of national accounts, balance of payments and international investment position in accordance with the respective statistical standards. More specifically, when looking at the quality of the statistics for the current cycle, some main features are worth highlighting.

It should be acknowledged that globalisation effects continue to pose challenges for the compilation and interpretation of statistics. More specifically in the MIP context, globalisation issues have affected national accounts and BoP/IIP statistics, and consequently the indicators in which they are used as components. Globalisation events keep on impacting European data due to a number of relocation / restructuring operations of large multinational enterprises affecting several European countries.

As large multinationals move their business around the globe, concerned statistical data producers need to improve their understanding of this phenomenon, enhance cooperation in view of a consistent statistical measurement across countries, including building the necessary infrastructure and strengthening the legal framework supporting the exchange of data, and inform users on cases where such developments have to be taken into account for the interpretation of indicators. In this context, several initiatives are ongoing. In particular, Eurostat is running an early warning system based on a network of national correspondents in cooperation with the Member States, the ECB and the ESCB. This should warrant an early exchange of information on forthcoming, ongoing or implemented international relocations of multinational enterprises

(MNEs) and ensure consistent statistics and coordinated implementation and communication. It is important to further analyse the statistical issues related to globalisation and MNEs in order to achieve a consistent framework permitting the measurement and the analysis of such phenomena. Eurostat and the ECB follow an FDI – microdata driven approach: the two Institutions jointly operate a platform (FDI network) for national FDI compilers to securely exchange information on major FDI transactions and positions to ensure a homogenous recording of such transactions across countries. In addition, both institutions support quarterly production meetings between national compilers to address the most sizable multilateral FDI asymmetries in due time.

As a response to the impact of globalisation on GNI figures and in cooperation with relevant Member States' institutions, Eurostat initiated a GNI MNE Pilot Exercise. This Exercise is now finalised as planned and the main objective has been achieved; the exercise contributed to a better understanding of the recording of globalisation issues in national accounts and in BoP/IIP, and helped identifying ways to overcome problems and deficiencies, which will be taken forward. Moreover, based on the results from the Pilot Exercise and other work on globalisation, Eurostat has prepared a GNI reservation to secure the additional work needed in all MSs, including with respect to data availability. Additionally, the grant programmes related to specific globalisation initiatives launched by Eurostat have successfully supported actions to deal with the globalisation issues in several Member States.

#### II.4.1 GROSS DOMESTIC PRODUCT

The quality of **GDP statistics** is crucial in this context as many of the MIP indicators are computed in the form of ratios to GDP. The ESA 2010 methodology ensures the consistency of GDP compilation with the international standards for national accounts, hence leading to better comparability between EU countries and on a global basis. In the EU, a regular and comprehensive quality assessment of national GDP data is in operation in the frame of GNI being used for own resources purposes, of which GDP constitutes the most predominant part.

The results of the third annual quality reporting exercise on data transmitted under the ESA 2010 methodology in 2018 were published in December 2019<sup>9</sup> and the evaluation of data submitted in 2019 has started. This analysis includes monitoring of completeness and timeliness, which are generally in line with legal requirements for GDP and its main aggregates. The analysis of consistency between quarterly and annual data generally show only very small temporary inconsistencies for some countries. Countries also generally achieved consistency when sending GDP according to production, expenditure and income approaches and transmitted breakdowns that fulfilled expected additivity requirements. Cross-domain consistency of data has also become subject to increased scrutiny but will only be part of regular quality reporting in 2021. Since inconsistencies mainly reflect delays in incorporating EDP or GNI related revisions consistently throughout the entire set of accounts, addressing these issues in a timely and systematic manner will improve the overall quality of national accounts including the accuracy of GDP as their headline figure.

In 2019, 18 Member States, namely Belgium, Bulgaria, Germany, Estonia, Spain, Croatia, Italy, Cyprus, Latvia, Lithuania, Hungary, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom<sup>10</sup>, as well as an EFTA country, Norway, carried out coordinated benchmark revisions of national accounts. In general, the benchmark revisions are carried out at least once every five years to incorporate new data sources and major changes in international statistical methodology, i.e. following the introduction of ESA 2010 methodology with a coordinated benchmark revision in 2014, the dates for the next coordinated benchmark revisions were agreed to be 2019 and 2024. The revisions mostly relate to improvements of the recording of flows vis-a-vis rest of the World sector, agriculture, government, financial services, and capital

<sup>9</sup> <https://ec.europa.eu/eurostat/en/web/products-statistical-reports/-/KS-FT-19-009>

<sup>10</sup> For the purposes of this report, the United Kingdom is considered as an EU member, as the analysis of this report is based on 2019 data and UK's withdrawal from the European Union entered into force on the 1<sup>st</sup> of February 2020.

formation (in line with the application of the ESA 2010), as well as to introducing statistical improvements and actions agreed in the context of the verification of GNI and/or EDP data<sup>11</sup>.

#### II.4.2 BALANCE OF PAYMENTS (BoP) AND INTERNATIONAL INVESTMENT POSITION (IIP) STATISTICS

The compilation of **Balance of payments (BoP) and International investment position (IIP) statistics** in EU Member States follows the 6<sup>th</sup> edition of the IMF Balance of Payments Manual (BPM6). Since 2017 several actions for the improvement of the quality of BoP/IIP statistics have been jointly undertaken by Eurostat and the ECB, mostly in the context of the implementation of the MoU. This has also further strengthened the close cooperation between the two institutions and between the ESS and the ESCB.

The overall BoP/IIP data comparability across the EU is appropriate, but affected by asymmetries in bilateral flows and stocks that need to be continuously addressed. Asymmetries remained at broadly the same level of last year for the current account components and relatively higher for direct and other investment flows. The ECB and Eurostat are actively working together with Member States to address asymmetries in BOP flows and IIP, examples being: i) the extensive use of the FDI Network; ii) the ongoing workshops on asymmetries taking place at the Eurostat BoP working group meetings; iii) the Early Warning System set up by Eurostat; iv) the so-called Asymmetry Resolution Meetings (ARM) set up by the ECB and Eurostat in the context of the quarterly BoP productions; and, v) the extended exchange of bilateral data.

The potential of these efforts is dependent on the active participation of the countries with the biggest absolute and relative asymmetries. However, confidentiality issues are often recognized as among the main obstacles to achieve effective progress.

While major efforts were undertaken in recent years to improve SPEs' data quality, there is still scope for improvement in some countries; either because the existing data sets are incomplete (because of the large number of institutions, particularly in Luxembourg), or need further improvement to meet up all the statistical needs (particularly in The Netherlands, Malta and Cyprus). Net errors and omissions remained stable and comparable to previous years. In cumulative terms, a bias can be observed for Cyprus, Bulgaria, and Sweden. Overall, BoP/IIP revisions had only a marginal impact on the analytical interpretation of the indicators. As in previous years, the largest revisions concerned FDI income, for which data are usually available only annually with a delay and revisions are therefore in practice unavoidable. Other investment income also recorded noticeable revisions for some countries.

For several countries, the BoP/IIP and NA ROW data show differences in the various accounts. Discrepancies are relevant for either credits/debits or both and in absolute and/or relative terms (in percentage of GDP). For the current account, the countries with the highest discrepancies are Ireland, Greece, France, Luxembourg, Malta, Portugal, Slovakia, Czechia and Denmark.<sup>12</sup> For financial account positions, the discrepancies between i.i.p. and the RoW account are more pervasive in France (assets), Malta and Croatia (assets). Work by these countries should build on the results of the CMFB task force on the consistency between national accounts and balance of payments, as well as on other initiatives of Eurostat and the ECB.

#### II.4.3 NOMINAL UNIT LABOUR COST

Data used in the compilation of the **Nominal unit labour costs** are seen as being robust and harmonised across the EU, due to the use of a common national accounts framework, in particular at the aggregate economy level. Data coverage is less complete, comparable and accurate with regard to more detailed data on some industries, where measuring output is more complex. While unit labour costs based on gross value added by industries are not published by Eurostat, they can be compiled based on published series. Some quality issues still remain, for example, in 2019, Ireland, Poland and Lithuania flagged breaks in time series,

<sup>11</sup> More information is available on Eurostat website: <https://ec.europa.eu/eurostat/web/esa-2010/esa-2010-implementation-and-data-quality>

<sup>12</sup> In the case of Denmark, revisions transmitted after the cut-off date brought the level of discrepancies below 0.5% of GDP.

while Croatia still provided employment data using the national concept instead of domestic concept. Since the 2019 benchmark revisions were associated with a more time intensive validation process and some countries sent data under embargo or sent updates in relation to the EDP verification process, some country data (from Belgium, Bulgaria, Croatia, Latvia, Malta, and the United Kingdom) were published only shortly before the start of the MIP policy exercise<sup>13</sup>. Denmark revised its annual figures in November 2019, i.e. after the legal end-September transmission deadline. In some cases, published data were associated with some temporary inconsistencies, e.g. notably between annual and quarterly accounts.

#### II.4.4 HOUSING PRICE STATISTICS

The quality of **Housing price statistics** was positively affected by the adoption of a Commission legal framework in 2013 when Eurostat started its official publication of the house price indices. This legal framework, accompanied by intensive harmonisation efforts regarding the used methodology ensures that the accuracy, reliability and comparability of the data among Member States is fully satisfactory. In terms of availability of data, ELSTAT (Greece) does not deliver data as required by Commission Regulation (EU) No 93/2013. While work for the development of a House Price Index is on-going, efforts need to be stepped up. For the time being, Eurostat continues to use the Residential Property Price Index published by the Greek central bank for the MIP exercise.

#### II.4.5 FINANCIAL ACCOUNTS STATISTICS

**Financial accounts statistics** are computed by integrating statistical data coming from several sector and instrument-specific sources. An annual report of the ECB on the quality of quarterly financial accounts data is required by Article 7 of Guideline ECB/2013/24. Since 2018, this quality report includes also assessments of national data from all EU countries as non-euro area countries provide quarterly data to the ECB on voluntary basis. The first extended quality report was published in June 2018. Eurostat's quality assessment for financial accounts is included in the ESA 2010 annual quality report on National and Regional Accounts. The latter quality report covers the quality criteria specified in Regulation (EC) No 223/2009, e.g. timeliness and completeness. In 2019, the report includes revision rates for annual financial accounts and vertical discrepancies between annual financial and non-financial accounts. Since 2017 several actions for the improvement of the quality of the financial accounts datasets (similar to the BoP/IIP datasets, see II.4.2) have been jointly undertaken by Eurostat and the ECB, mostly in the context of the implementation of the Memorandum of Understanding. This has also further strengthened the close cooperation between the two institutions and the ESS and the ESCB.

Certain areas for improving the reliability of the datasets have been identified, including the improved coverage of the liabilities of the other financial institutions (OFIs), the reconciliation of the "Rest of the World" sector in financial accounts with the comparable figures in the BoP/IIP domain (see section II.4.2), the reduction of discrepancies with non-financial sector accounts, and improved recording of the distinction between consolidated and non-consolidated data for the non-financial corporations sector. To ensure the full coverage of OFIs, cross-checking with business registers or the use of other methods could be taken into account for further improvements in Germany and Poland. In Croatia, there is partial coverage of assets and liabilities of OFIs that are not supervised by the NCB or the financial markets supervisory authority. For those OFIs, coverage is limited to data available from counterparty statistics of the covered financial institutions (S12 entities). The Netherlands has already significantly improved the OFI coverage and work is ongoing to complete it. In Sweden it is difficult to determine the coverage for particular OFI sub-sectors, groups of entities or instruments from the existing data sources. This may mean that these data are not fully covered – it is also not possible to estimate the missing data.

Moreover, several Member States, namely Denmark, Czech Republic, Ireland, Slovakia and the United Kingdom, showed differences between the annual and quarterly data when the statistical annex to the alert

<sup>13</sup> See: [https://ec.europa.eu/eurostat/documents/737960/9861115/Benchmark+revisions+2019\\_data+availability.pdf](https://ec.europa.eu/eurostat/documents/737960/9861115/Benchmark+revisions+2019_data+availability.pdf)

mechanism report was prepared in October 2019. Additionally, when MIP level 2 report on the European System of Accounts was prepared in February 2020, high discrepancies were observed for Luxembourg and Malta as well, which had a negative impact on the regular Eurostat dissemination of financial accounts indicators.

In general, revisions to Private sector credit flow and debt are mostly related to non-financial corporation (NFC) loan financing, whereas revisions to household loan financing and NFC debt securities issuance tend to be low. For consolidated Private sector debt, the revisions transmitted by countries in 2019 were particularly high for Denmark, Ireland, France, Cyprus, Latvia, the Netherlands, Luxembourg, Malta and Sweden. For consolidated private sector debt of household and NPISH sector, revisions were high for Bulgaria, Denmark, Belgium, Estonia, Ireland, Cyprus, Latvia, Luxembourg and Malta.

For Total financial sector liabilities, the revisions are often associated with the improved coverage of Other financial institutions (OFIs). Large revisions were observed for Denmark, Luxembourg, Cyprus, Malta, the Netherlands, Ireland and Estonia.

#### II.4.6 GOVERNMENT FINANCE STATISTICS

The quality of the **Government finance statistics**, for which general government gross debt is also used in MIP, is reinforced by an enhanced quality assurance mechanism around the EDP process based on a well-defined legal framework which gives the Commission (Eurostat) the power and possibility for detailed quality checks of the data including on-site visits to the Member States. In its recent annual report to the European Parliament<sup>14</sup>, the Commission confirmed the good overall quality of the reported fiscal data. Eurostat had reservations on the data reported for two countries in the April 2019 EDP notifications (Eurostat expressed a reservation for Hungary and Slovakia)<sup>15</sup> and, following the October 2019 EDP notifications, Eurostat withdrew its reservations on the quality of the data reported by Hungary and Slovakia<sup>16</sup>.

#### II.4.7 LABOUR MARKET STATISTICS

**Labour market statistics** used in the MIP are based on the EU Labour Force Survey (EU-LFS) data. The overall accuracy of EU-LFS statistics is currently considered as high and data are highly comparable among Member States. The quality of the LFS is constantly monitored by a large set of indicators; in particular, two of them registered this year a slight deterioration: the unit non-response rate and the proxy rate. This possibly points to future challenges which will be monitored.

<sup>14</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019DC0155&from=EN>

<sup>15</sup> <https://ec.europa.eu/eurostat/documents/2995521/9731224/2-23042019-AP-EN.pdf>

<sup>16</sup> <https://ec.europa.eu/eurostat/documents/2995521/10064349/2-21102019-AP-EN.pdf>

### III. ANNEX I – KEY FEATURES OF THE QUALITY ASSESSMENT OF THE MACROECONOMIC STATISTICS UNDERLYING THE MIP

A quality assessment supporting the MIP exercise should focus on scrutinising the relevant quality criteria for the MIP process. These criteria should be embraced in the three main blocks clustering the quality principles of the European Statistics Code of Practice and the ESCB Public Commitment on European Statistics.

Given that the MIP indicators are designed to 'identify imbalances' and to develop 'multilateral policy recommendations', a 'fit-for-purpose' quality assessment for the MIP should give prominence to the criteria assessing:

- the **institutional environment**, such as the *legal basis* supporting the collection of the statistics, the *quality assurance mechanisms* in place and the *policy uses* of the underlying statistics;
- the robustness of the **statistical / compilation process**; analysing whether the important parts of the statistics are supported by comprehensive *collection of raw data* or by sound estimation statistical methods supplemented when necessary by *expert judgement*; and
- the **quality of the statistical output**; focusing on the accuracy and the comparability of the underlying statistical output across countries and across time. **Accuracy and reliability**<sup>17</sup> are relevant because policy makers would need an assessment on whether the reported value portrays the reality by applying the concepts and rules defined in international statistical standards. In particular, reliability needs to be assessed in the sense whether statistics are also consistent over time or if revisions may result in final values of the indicators diverging substantially from the value reported when the policy assessment of imbalances was undertaken. **Comparability** (and coherence)<sup>18</sup> requires judging whether the statistics for all EU Member States *abide by the international statistical standards* or European regulations and identifying major deviations.

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<sup>17</sup> Reliability is defined in principle 12 of the European Statistics Code of Practice and ESCB Public Commitment on European Statistics.

<sup>18</sup> Coherence and comparability are defined in principle 14 of the European Statistics Code of Practice and ESCB Public Commitment on European Statistics.

### III.1 GROSS DOMESTIC PRODUCT

Given that many of the MIP indicators are compiled relative to Gross domestic product (GDP), it is important to assess the quality of GDP statistics to ensure the quality of MIP indicators compiled by relating domain-specific statistics or indicators to GDP.

#### A. INSTITUTIONAL ISSUES

##### i) *Legal basis*

European national accounts are compiled according to the harmonised accounting concepts, definitions, classifications, methodology and calculating rules described in Regulation (EU) No 549/2013, which covers the European System of Accounts (hereinafter referred to as “ESA 2010”)<sup>19</sup>. The ESA 2010 also includes the Transmission Programme (Annex B), a set of tables specifying which data, at what detail, should be provided at what timeliness, subject to temporary derogations<sup>20</sup>.

##### ii) *Quality assurance mechanisms*

As Gross National Income (GNI) under Regulation (EU) No 2019/516 (hereinafter referred to as “GNI Regulation”)<sup>21</sup> is used for administrative purposes, the countries are obliged to give detailed Inventories of the sources and methods (GNI Inventories) used to produce GNI aggregates and their components in accordance with ESA 2010 to the Commission. GDP and the transaction flows in it form a major part of GNI<sup>22</sup> and are therefore included in the GNI Inventories, thus being a source for assessing GDP quality. The verification of GNI Inventories is supplemented by Eurostat information visits to Member States to verify the quality of GNI aggregates and their components and their compliance with ESA 2010. National accounts experts from other EU Member States may attend the GNI information visits as observers. Eurostat's GNI verification activities are checked annually by the European Court of Auditors. The above mentioned administrative and policy uses force both the European Union and the Member States themselves to verify the GDP and GNI calculations. Monitoring of country's compliance with the requirements of the ESA 2010 transmission programme has also been enhanced, and further work on improvement of validation procedures is being taken forward with Member States.

Provisions for quality reporting and assessment of the ESA 2010 data, including GDP, are established by Art. 4, Regulation (EU) No 549/2013. The adoption of the Commission Implementing Regulation (EU) No 2016/2304 of 19 December 2016 on the modalities, structure, periodicity, and assessment indicators of the quality reports on data transmitted pursuant to Regulation (EU) No 549/2013, enabled the introduction of the first quality reporting exercise by Member States in 2017. The annual quality reporting covers all ESS quality criteria. It starts on the basis of seven assessment indicators and will add another nine indicators by 2021. The Member States provide annual quality reports to Eurostat by end of May, by covering the data transmitted during the previous year. Eurostat makes public its own assessment based on the country reports. The results of the third report were published in December 2019<sup>23</sup>.

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<sup>19</sup> Regulation (EU) No 549/2013 of the European Parliament and the Council of 21 May 2013 on the European system of national and regional accounts in the European Union, *OJ L 174, 26.6.2013, p. 1*.

<sup>20</sup> The ESA 2010 temporary derogations can be found in the Commission Implementing Decision No [2014/403/EU](#) of 26 June 2014.

<sup>21</sup> Regulation (EU) 2019/516 of the European Parliament and of the Council of 19 March 2019 on the harmonisation of gross national income at market prices and repealing Council Directive 89/130/EEC, Euratom and Council Regulation (EC, Euratom) No 1287/2003 (GNI Regulation). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0516&from=EN>

<sup>22</sup> Since GNI equals GDP minus primary income payable by resident units to non-resident units plus primary income receivable by resident units from the rest of the world (GDP + net primary income received from ROW = GNI), the GNI verification procedures implicitly cover the verification of GDP and all its components.

<sup>23</sup> See: Eurostat Quality report on National and Regional Accounts (2019 edition) <https://ec.europa.eu/eurostat/en/web/products-statistical-reports/-/KS-FT-19-009>

### *iii) Policy uses*

As GDP is the key variable to measure economic development it is also used in policy decision making at the European Commission, ECB, and for budgetary policy purposes in the Member States. GDP and GNI statistics are used in the European Union for various administrative purposes. GNI forms the basis for the 4<sup>th</sup> resource of the European Union own resources. In addition, Member States' GDP data are also used for administrative purposes in the Excessive Deficit Procedure (EDP) as general government debt and deficit are proportioned to GDP in the EDP criteria. Furthermore, regional GDP per capita is used in the decisions for the funding from the European Union Structural Funds to the regions of the Member States.

## **B. COMPILATION PROCESS**

GDP is compiled by Member States using an ample and comprehensive set of primary data sources. The national statistical authorities collect themselves the majority of the basic data, the quality of which is defined by national and European regulations, by using both statistical surveys and administrative records (such as taxation records), and bookkeeping data from both governmental bodies and enterprises. Data consistency is enforced at the economy-wide level by the fact that GDP is calculated using the production, expenditure and income approaches which should lead to the same result.

## **C. QUALITY ASSESSMENT OF OUTPUT**

### *i) Accuracy and reliability*

There is a comprehensive system for verification of GNI data and the annual reports on the quality of GNI data are available for all countries. This includes the GNI Expert Group to issue annual opinions on the appropriateness of the GNI data submitted by the Member States for own resources purposes.

Article 5(1) of the GNI Regulation provides for the Commission to verify the sources, their uses and the methods in the GNI Inventories based on a verification model drawn up in close cooperation with the GNI Expert Group and based on the principles of peer review and cost-effectiveness and with respect to reliability, comparability and exhaustiveness. A document that includes the transmitted data and reports on quality of GNI data sent each year before 1 October to Eurostat is presented in November to the GNI Expert Group for discussion and examination. The annual GNI data and the opinion of the GNI Expert Group are transmitted to DG BUDG for the purpose of budgetary calculations. The main priority of the GNI verification work in 2019 was put towards the finalisation of the verification cycle 2016-2019, which was achieved at the end of 2019 and relevant reservations were proposed to the concerned Member States. A comprehensive structure of verification previously agreed with Member States was applied.

Moreover, the practical validation of GDP data puts emphasis on consistency requirements. When quarterly and annual data are submitted to Eurostat, it is important to ensure that these figures are consistent. Small differences may be tolerated, but not major ones. Consistency between annual data and the sum of the data for the four individual quarters for certain key EU aggregates are analysed in the context of the ESA 2010 quality reporting exercise with generally very small inconsistencies limited to vintages or rounding. The consistency of aggregates and breakdowns is also monitored and usually well fulfilled.

### – Revisions

Member States may have routine revisions of GDP data every year when more surveys or administrative data become available, replacing preliminary estimates. When the final annual source data of the reference year are available and GDP calculations are based on the balanced supply and use tables by the product groups, the revisions in the annual GDPs of the Member States are generally small. For own resources purposes, the GNI figures become time-barred after four years. However, where revisions are likely to have a material effect, the Commission issues reservations which means that GNI data remain open for possible revision. Similarly, EDP related reclassifications and methodological improvements might also lead to GDP revisions.

Benchmark revisions are coordinated major European revisions, taking place at least once every five years to incorporate new data sources and major changes in international statistical methodology. In 2019, 18 Member States carried out benchmark revisions in national accounts.<sup>24</sup>

*ii) Comparability*

Comparability is ensured by the application of common definitions and requirements (ESA 2010). While the aim is to improve the quality of statistics, the level of comparability between Member States however may also depend on the comparability/level of development in the basic data used as input for the GDP compilation, and hence the level of efforts needed to ensure alignment with the ESA 2010 and BPM6 definitions at macro level.

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<sup>24</sup> Country specific information: [https://ec.europa.eu/eurostat/documents/24987/6624264/Metadata\\_particularities.pdf](https://ec.europa.eu/eurostat/documents/24987/6624264/Metadata_particularities.pdf)

## III.2 EXTERNAL IMBALANCES AND COMPETITIVENESS

Macroeconomic imbalances remain a serious concern, requiring decisive, comprehensive and coordinated policy action. For a better analysis of the country's economic external and domestic situation, the MIP indicators for this purpose are grouped into: i) external imbalances and competitiveness, and ii) internal imbalances. The first group covers MIP indicators calculated from the BoP/IIP and other **external statistics** and the indicator **Nominal unit labour cost** derived from the National accounts data.

### III.2.1 BALANCE OF PAYMENTS AND OTHER EXTERNAL STATISTICS

There are four headline indicators in the MIP scoreboard derived from balance of payments and other external statistics:

- Current account balance (CA) as % of GDP, 3 year average
- Net international investment position (NIIP) as % of GDP
- Real effective exchange rate (REER), 42 trading partners, HICP/CPI deflators, 3 year % change
- Export market share (EMS) as % of world exports, 5 year % change

### III.2.2 BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION INDICATORS

#### A. INSTITUTIONAL ISSUES

##### i) *Legal basis*

BoP/IIP are provided to the ECB on the basis of Guideline ECB/2011/23<sup>25</sup>, as amended (hereinafter "Guideline ECB/2011/23") and to Eurostat on the basis of Regulation (EC) No 184/2005<sup>26</sup>.

These legal acts do not impose back data requirements in compliance with the BPM6 statistical standard. Therefore, long time series are provided on a voluntary basis by Member States. The length of the time series has improved and in the last MIP Scoreboard the relevant series for the compilation of the indicators were available for all Member States for at least 10 years.

##### ii) *Quality assurance mechanisms*

Since 2017 several actions for the improvement of the quality of the BoP/IIP datasets have been jointly undertaken by Eurostat and ECB, mostly in the context of the implementation of the Memorandum of Understanding (MoU). This has also further strengthened the close cooperation between the two institutions and the ESS and the ESCB.

An annual report from the Executive Board of the ECB to the Governing Council on the quality of the external statistics data is required by Article 6 of Guideline ECB/2011/23. The report follows the principles of the "Public commitment on European Statistics by the ESCB"<sup>27</sup> and includes an extensive quantitative assessment of the statistical output. The ECB report is submitted to the WG ES and STC via written procedures and approved by the Executive Board before being submitted to the ECB Governing Council and published on the ECB website.

The European Commission (Eurostat) produces an annual quality report on the basis of Article 4(3) of Regulation (EC) No 184/2005. This report is reviewed with the assistance of the European Statistical System Committee referred to in Article 11 of Regulation 184/2005, amended by Article 4(4) of Regulation (EU)

<sup>25</sup> Guideline of the European Central Bank of 9 December 2011 on the statistical reporting requirements of the European Central Bank in the field of external statistics (ECB/2011/23), OJ L 65, 3.3.2012, p. 1.

<sup>26</sup> Regulation (EC) No 184/2005 of the European Parliament and of the Council of 12 January 2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment, OJ L 35, 8.2.2005, p. 23.

<sup>27</sup> Available on the [ECB's website](#).

2016/1013<sup>28</sup>. The quality assessment of this report is conducted in accordance with the principles established by Commission Regulation (EC) No 1055/2008<sup>29</sup> and Commission regulation 1227/2010. It verifies compliance of the BoP data reported by EU Member States with all the quality criteria and the Regulation on European statistics (Article 12(1) of Regulation (EC) No 223/2009). The Eurostat report is a condensed analysis of the results of national quality reports pre-filled by Eurostat and completed by Member States: it is presented to the BoP Working Group, publicly disseminated on Eurostat's website, and sent to the European Parliament and the Council for information.

### *iii) Policy uses*

BoP/IIP data are broadly used for monetary and economic analysis throughout the world, i.e. not only for European policy purposes, but generally by all economic analysts looking into external imbalances/relationships and competitiveness in a context of increasingly mobile financial flows. In particular, these data are used to explain changes in monetary developments, therefore supporting the preparation and explanation of monetary policy decisions. BoP/IIP statistics are also broadly used in the European Systemic Risk Board (ESRB) Risk Dashboard, by the European Commission for various policy purposes, and by the IMF in its work.

## **B. COMPILATION PROCESS**

At national level, the compilation of BoP/IIP is usually a competence of either the NCB or the NSI, sometimes both. The introduction of the BPM6 provided an opportunity for a large group of countries to move into survey based systems, as an alternative to traditional international transactions reporting systems (“settlement systems”). However, by nature, BoP/IIP statistics are rather eclectic as regards data sources, relying on micro (e.g. the CSDB) and macro data sets, direct reporting and counterpart information, statistical surveys and administrative data sets (e.g. for the general government sector). National compilation systems also seek synergies with worldwide exercises, such as the IMF CPIS and CDIS surveys. Several statistical methods and compilation assumptions are used, including the derivation of transactions from changes of stocks, taking into account price and exchange rate revaluations.

## **C. QUALITY ASSESSMENT OF OUTPUT**

### *i) Accuracy and reliability*

The compilation of BoP/IIP in EU Member States is based on the BPM6. However, there are challenges in the measurement of some components, namely reinvested earnings on foreign direct investment and the valuation of unlisted shares and other equity, which may affect the accuracy and comparability of some details. In addition, some national compilers still struggle to ensure adequate data coverage and quality for SPEs. Revisions affect to different degrees the individual parts of BoP/IIP as mentioned below.

#### – Revisions

Overall, since the last review period, revisions have not significantly altered the analytical interpretation of the headline indicators. Furthermore, any period of the time series could be subject to revisions during the data transmissions, with practices varying along the different national compilers. For BoP, direct investment income is the series more extensively revised, since data are usually available only annually and revisions in higher frequency data are therefore in practice unavoidable. Other reasons for revision in BoP/IIP include

<sup>28</sup> [Regulation \(EU\) 2016/1013](#) of the European Parliament and of the Council of 8 June 2016 amending Regulation (EC) No 184/2005 on Community statistics concerning balance of payments, international trade in services and foreign direct investment, OJ L 171, 29.06.2016, p. 144.

<sup>29</sup> [Commission Regulation \(EC\) No 1055/2008](#) of 27 October 2008 implementing Regulation (EC) No 184/2005 of the European Parliament and of the Council, as regards quality criteria and quality reporting for balance of payments statistics, OJ L 283, 28.10.2008, p. 3.

better coverage (for example of SPEs), implementation of new data sources and new data production systems by the national compilers, major economic events affecting BoP/IIP, and revisions in related statistical domains. Further, in view of the Harmonised Benchmark Revision that took place in 2019, Member States have as much as possible implemented coordination measures to ensure alignment of the revised ESA 2010 data with the Balance of Payments statistics. Eighteen EU Member States and one EFTA country implemented benchmark revisions for balance of payments and national accounts in 2019. Greece and Ireland carried out benchmark revisions of balance of payments only (without corresponding revisions of national accounts). Czechia, Greece (for national accounts), Luxembourg, Malta and Poland are expected to carry out their benchmark revisions in 2020.

## ii) Comparability

Intra-EU asymmetries continue to be a relevant quality concern and will most likely persist given the increasingly multi-territorial presence of enterprises that require innovative and complex collection and estimation methods. Experience with the European FDI Network shows that data exchange can help to solve asymmetries, but several preconditions must be met. One of them is the willingness of all Member States impacted by a particular asymmetry to use the Network, or in case of other components of the BoP, to get into contact with the main counterparts with regard to bilateral asymmetries and decisively resolve them. The ongoing Workshops on asymmetries in services held at Eurostat's BOPWG meetings, the Early Warning System and the new quarterly Asymmetry Resolution Meetings are concrete contributions in this direction. The impact of all these initiatives on overall EU asymmetries depends on the participation of countries with the biggest absolute asymmetries, including the United Kingdom<sup>30</sup>, France, Germany, Luxembourg, the Netherlands and Ireland, as well as countries with relevant asymmetries relative to their size, such as Cyprus and Malta. In addition, bilateral contacts with the U.S. Bureau of Economic Analysis (BEA) are also ongoing to tackle the large bilateral US asymmetries with some EU Member States. Finally, asymmetries have been highlighted as an area for BoP statisticians to investigate also in the context of the compilation of multi-country supply, use, input and output tables within projects such as FIGARO (focused on measuring global trade in value added).

The adoption of BPM6 and ESA 2010 ensured conceptual consistency between national accounts and BoP/IIP. However, discrepancies still exist and are primarily due to vintage, revision effects and different data sources, but they are also explained by differences in interpretation and practical implementation of the two manuals. For several countries, the BoP/IIP and NA ROW data still show differences across the various components of the accounts. Hence, it would be important for countries to maintain their efforts and build on the results of the CMFB task force on the consistency between national accounts and balance of payments, as well as on other initiatives of Eurostat and the ECB.

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<sup>30</sup> The ONS has published two analyses on its trade asymmetries: "[Asymmetries in Trade Data: A UK perspective](#)", and "[Asymmetries in Trade Data: Diving Deeper into UK Bilateral Trade Data](#)".

### III.2.3 REAL EFFECTIVE EXCHANGE RATE STATISTICS

#### A. INSTITUTIONAL ISSUES

##### *i) Legal basis*

The real effective exchange rates (REERs) data used in the MIP are compiled by the European Commission on the basis of a widely recognized standard methodology implemented by DG ECFIN (Quarterly Reports on effective exchange rates evolutions, together with the underlying data, are published on the Commission's website)<sup>31</sup>. REERs are not directly based on a legal act, but rely on national data (exchange rate fixings, trade data and deflators), mostly compiled and collected on the basis of specific legal acts. REERs are derived indicators and therefore their quality is mostly a function of the quality in underlying data sets.

##### *ii) Quality assurance mechanisms*

All data underlying the calculation of REERs are collected from reliable institutional sources, compiled by the ECB, the IMF and Eurostat. Exchange rates, trade data and deflators are subject of quality reporting in their respective domains. DG ECFIN has produced a comprehensive quality report on its REER statistics together with an assessment of how they compare to the REER time series compiled by four international institutions ( ECB, OECD, IMF and BIS)<sup>32</sup>.

##### *iii) Policy uses*

Both nominal effective exchange rate (NEER) and REER are widely used measures of price and cost competitiveness. NEERs describe changes in the average overall value of a currency with reference to a given base period and a given group of reference countries. The REERs identify relative evolutions in the prices or production costs of domestically produced goods compared to the prices or production costs of goods produced by competitor countries, when expressed in a common currency.

#### B. COMPILATION PROCESS

Nominal effective exchange rates are calculated as trade-weighted geometric averages of the bilateral exchange rates against the currencies of competing countries. The real effective exchange rates or the “relative price and cost indicators” are calculated as the adjusted NEERs with trade-weighted price or cost deflators.

#### C. QUALITY ASSESSMENT OF OUTPUT

##### *i) Accuracy and reliability*

The quality of the REER indicators depends on the quality of the underlying sources, in particular those used for constructing export weights and deflators.

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<sup>31</sup> See e.g. the [European Commission's quarterly reporting on price and cost competitiveness data](#).

<sup>32</sup> See the [Report on quality, sources and methods](#) and the [Comparison of Consumer Price deflated REER](#).

- The REERs used in the MIP are based on a harmonised index of consumer prices (or national CPI where appropriate) relative to a panel of the most important trading partners of each European Union Member State. The REER used in the MIP exercise is computed against a panel of 42 other countries, having been expanded by five additional countries in 2013 in order to improve representativeness via better coverage of trading partners. The basket of trading partners includes China, Brazil, Russia, South Korea and Hong-Kong in addition to the previously used composition of 37 industrial countries. This allows for a better accounting of the increasing role of some emerging economies when measuring competitiveness. The Commission may consider extending the basket of trading partners further when data of sufficient quality for additional emerging countries become available. Revisions

As a general rule, the full series is updated once a quarter and/or at the time of European Economic Forecast publication. Changes in methodology may occur, albeit infrequently, in particular the addition of new countries to the competitor group in the compilation process.

*ii) Comparability*

Due to the use of index numbers vis-à-vis a base period, the usual caution must be used for any geographical comparison. The comparability over time of the data can be considered as very high, methodological changes may occur but have a limited effect on the overall pattern of REER indicators. Each time these occur, recalculations under the new definitions are performed for the whole time series to ensure consistent time series without breaks. The changes are mainly the result of including new trading partners in the trade-weighted index, and/or new countries in the euro area.

### III.2.4 NOMINAL UNIT LABOUR COST

The following headline indicator based on the National Accounts data is included in the MIP scoreboard:

- **Nominal unit labour cost (NULC) index (2010=100), 3 year % change**

#### A. INSTITUTIONAL ISSUES

##### *i) Legal basis*

There is no specific legal basis for the calculation of unit labour costs *per se*, but it is derived from several components which themselves are collected under the overarching framework of the national accounts. According to the Eurostat MIP Scoreboard presentation<sup>33</sup>, “Nominal unit labour cost compares remuneration (compensation per employee) and productivity (GDP in volume per employment) to show how the remuneration of employees is related to the productivity of labour. An increase means that the average compensation per employee grew more than labour productivity. The employment data covers both employees and self-employed, while remuneration covers wages and salaries and employers' social contributions. The unit labour cost indicator is compiled using national accounts data”.

##### *ii) Quality assurance mechanisms*

Quality is assured by strict application of ESA 2010 concepts and thorough validation of country data. Data are collected from reliable sources applying high standards to methodology and ensuring high comparability. In addition, Eurostat conducts an annual compliance exercise for all Member States. As stipulated in the Commission Implementing Regulation 2016/2304, Eurostat established regular quality reporting on national and regional accounts prefilled with five quantitative assessment indicators focusing on completeness, timeliness and consistency. These cover the components of the MIP ULC indicator and generally indicate only few gaps in completeness and timeliness of regular transmissions (subject to remaining derogations)<sup>34</sup>.

##### *iii) Policy uses*

Unit labour cost, which is defined as the cost of labour per unit of output, is a common measure of the external competitiveness of a country. Labour being a major input of production, its compensation directly affects the costs and prices of outputs, thus having a bearing on export market share and growth potential. It allows the comparison and analysis of cost competitiveness across countries.

However, specific developments, such as notably an impact of globalisation on GDP figures, due to the relocation of business within multinational enterprises, may have to be taken into account when interpreting productivity figures of certain countries (e.g. for Ireland).

The data are widely used for many purposes and publications, such as the assessment by the Commission of the functioning of the labour market within the Europe 2020 Joint Assessment Framework or the annual Competitiveness report, the ECB's Economic Bulletin, and Annual Report, and by other International Organisations such as the IMF and the OECD (the latter uses ECB data for the publication of whole economy European ULCs). ULCs are mentioned explicitly as “other factors” which need to be analysed in the assessment of Convergence in the EU.

#### B. COMPILATION PROCESS

<sup>33</sup> See <http://ec.europa.eu/eurostat/web/macroeconomic-imbances-procedure/methodology>.

<sup>34</sup> See updated list of ESA 2010 derogations: Commission Implementing Decision (EU) 2018/1891

of 30 November 2018 amending Implementing Decision 2014/403/EU on granting derogations to Member States with respect to the transmission of statistics pursuant to Regulation (EU) No 549/2013 of the European Parliament and of the Council concerning the European system of national and regional accounts in the European Union

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018D1891&from=EN>

The Commission and the ECB have agreed on a single calculation method by applying the following formulae:

- $ULC = \text{Compensation per employee} / \text{Labour productivity}$
- $\text{Compensation per employee} = \text{Compensation of employees} / \text{number of employees, domestic concept};$
- $\text{Labour productivity} = \text{GDP at market prices, chain-linked volumes reference year 2010} / \text{number of people in employment, domestic concept}.$

## C. QUALITY ASSESSMENT OF OUTPUT

### i) Accuracy and reliability

Overall the underlying data used in the compilation of the ULC are robust and harmonised across the EU, particularly at the whole economy level. Breakdowns by economic activity can also be compiled using available data on gross value added, employment and compensation of employees by industries.

#### – Revisions

Nominal unit labour cost data are usually revised to reflect data changes in its components. Revisions may stem from implementation of new compilation standards (e.g. ESA 2010), periodic benchmarking on population census results, and improvement of labour force survey methodology. These methodological and statistical changes may lead to some breaks in the data series if back estimations are not done for all underlying series.

In 2019, Ireland and Poland and Lithuania have flagged breaks in time series, while Croatia still provided employment data using the national concept instead of domestic concept. Moreover, GDP may be revised in relation to an improved recording of global business activities, addressing issues raised in the context of the GNI or EDP verification process, as well as other methodological or technical improvements. Since Member States carried out benchmark and regular revisions in national accounts in 2019, the NULC indicator was impacted, since revisions impacted GDP, employment and compensation of employees to a different extent<sup>35</sup>. Overall, changes in growth rates were however generally more limited than the revisions of levels. Average changes in the NULC 3 year % change indicator were highest for Ireland and Hungary with +1.3 and +0.9 percentage points (pp). Upward changes for specific years were highest for Romania (+3.5 pp), Ireland (+3.1 pp) and Hungary (+2.7 pp). Downwards changes were also most pronounced for Romania (-4.1 pp), followed by Luxembourg (-3.1 pp) and Cyprus (-2.5 pp).

### ii) Comparability

Cross-national comparability is very high due to the use of a common national accounts framework and the standardized ULC formulae to derive the statistics, but also owing to continuous efforts to enhance harmonization of the definition, coverage, and methodological treatment of the components comprising this labour cost indicator. The prevalence of this approach has been sought in due consideration of the use of different sources for the primary data of labour input (household surveys, business surveys administrative records, etc.), the importance of adjustments for alignment with national accounts concepts and statistical conversion techniques (e.g., from jobs to persons and to full-time equivalents).

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<sup>35</sup> An analysis of the impact of the 2019 coordinated benchmark revision on main aggregates has been published in Statistics Explained: <https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=454757>

### III.3 INTERNAL IMBALANCES

The internal imbalances cover MIP indicators derived from price statistics as **% y-o-y change in deflated House prices**, underlying statistics from the national financial accounts (**Private sector credit flow as % of GDP**, consolidated; **Private sector debt as % of GDP**, consolidated; **% y-on-y change in Total financial sector liabilities**, non-consolidated), the indicator from government finance statistics (**General government sector debt as % of GDP**) and the **Unemployment rate** (3 year average) from labour market statistics.

#### III.3.1 HOUSING PRICE STATISTICS

The following headline indicator based on the House price index (HPI) is included in the MIP scoreboard:

- **House price index (HPI) (2015=100), deflated, 1 year % change**

Changes in dwelling prices are measured by Eurostat's (nominal) house price indices (HPIs), which are, for MIP scoreboard purposes, deflated by household final consumption deflators derived from the national accounts (ESA 2010).

#### A. INSTITUTIONAL ISSUES

##### *i) Legal basis*

The legal basis for the compilation of house price indices in the EU is provided by Regulation (EU) 2016/792 of 11 May 2016 on harmonised indices of consumer prices and the house price index<sup>36</sup>.

The nominal HPIs of EU countries are compiled by National Statistical Institutes, applying a harmonised statistical approach in terms of measurement target, coverage and index calculation. Compilation and publication of these indices are conducted according to Commission Regulation (EU) No 93/2013<sup>37</sup>.

##### *ii) Quality assurance mechanisms*

Eurostat and National Statistical Institutes are working to ensure that the statistical practices used to compile national HPIs are in compliance with methodological requirements and that good practices in the field of house price indices are being followed.

Eurostat has developed together with the EU Member States a framework to assess the quality of the HPIs, where the concepts in the Technical Manual and the Handbook on Residential Property Prices Indices are combined with the European Statistical System (ESS) quality dimensions. The aim is to maintain and, where necessary, improve current practices, taking into account the country-specific conditions.

##### *iii) Policy uses*

HPIs are primarily important for financial-stability related purposes and for macroeconomic analyses and forecasting.

#### B. COMPILATION PROCESS

The HPI data are compiled at national level by the National Statistical Institutes. NSIs collect data from administrative sources on dwelling transactions and from other sources on real estate. Adjustments for differences over time in the characteristics of the transacted dwellings are made according to a common

<sup>36</sup> Regulation (EU) 2016/792 of the European Parliament and of the Council of 11 May 2016 on harmonised indices of consumer prices and the house price index, and repealing Council Regulation (EC) No 2494/95, *OJ L 135*, 24.5.2016, p. 11–38.

<sup>37</sup> Commission Regulation (EU) No 93/2013 of 1 February 2013 laying down detailed rules for the implementation of Council Regulation (EC) No 2494/95 concerning harmonised indices of consumer prices, as regards establishing owner-occupied housing price indices, *OJ L 33*, 2.2.2013, p. 14.

statistical methodology<sup>38</sup>. Since HPI time series start in most cases in the year 2005 or later, the estimation of back data is considered important for cyclical analyses. This however remains a challenge, since the collection of data and the compilation of indicators were typically conducted outside the area of official statistics. Due to the scarcity of information about house price changes in past periods and its lack of statistical harmonisation, it has to be accepted that back data are generally of lower statistical quality than HPIs, with additional explanation given in metadata.

Data for Greece are currently taken from the Residential Property Price Index produced by the NCB. For Austria and Italy, data compiled by the NCB are used for years before 2010.

## C. QUALITY ASSESSMENT OF OUTPUT

### i) Accuracy and reliability

Overall, the level of statistical quality of HPIs can be considered fully satisfactory.

The accuracy of source data is monitored by assessing the methodological soundness of price and weight sources and the adherence to the methodological recommendations. There is a variety of data sources both for weights (national accounts data, construction statistics, etc.) and prices (administrative data, bank (mortgage) data, construction companies, real estate agents, etc.).

#### – Revisions

HPI series are revisable under the terms set out in Commission Regulation (EC) No 1921/2001<sup>39</sup>. The published HPI data may be revised for mistakes, new or improved information, and changes in the system of harmonised rules. The HPI data are released quarterly, and they may include some provisional data for the latest quarter. These are usually confirmed or revised to the final figures the following quarter. Major revisions are normally released with explanatory notes.

In July 2019, the HPI for Germany has been revised upwards (between 2016 and 2018) to better capture the locations of property transactions and therefore to better reflect strong rise of prices in large cities, whereas for Slovenia it has been revised downwards (for 2018) after corrections in the calculation process.

In October 2019, the HPI for Hungary has been revised upwards between 2017 and quarter 1 of 2019, following an adjustment of the housing quality composition index.

### ii) Comparability

The comparability is ensured by the application of common definitions and appropriate methodology.

Current HPIs are sufficiently accurate and fully comparable across countries. Existing issues are addressed by Eurostat, and, more widely, in ESS working groups or workshops.

In July 2017 the HPI series were re-referenced from 2010=100 to 2015=100, as stipulated in Regulation (EU) no 2016/792<sup>40</sup>. The change of reference year caused revisions by 0.1 percentage points to around 5% of previously published rates of change for the HPI because of rounding effects.

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<sup>38</sup> See the Handbook on Residential Property Prices Indices: <https://ec.europa.eu/eurostat/documents/3859598/5925925/KS-RA-12-022-EN.PDF>

<sup>39</sup> Commission Regulation (EC) No 1921/2001 of 28 September 2001 laying down detailed rules for the implementation of Council Regulation (EC) No 2494/95 as regards minimum standards for revisions of the harmonised index of consumer prices and amending Regulation (EC) No 2602/2000, OJ L 261, 29.9.2001, p. 49.

<sup>40</sup> Regulation (EU) No 2016/792 of the European Parliament and the Council of 11 May 2016 on harmonised indices of consumer prices and the house price index, and repealing Council Regulation (EC) No 2494/95, OJ L 135, 24.5.2016.

### III.3.2 FINANCIAL ACCOUNTS STATISTICS

Three of the MIP headline indicators are based on annual financial accounts data:<sup>41</sup>

- Private sector credit flow (PSCF), consolidated, as % of GDP
- Private sector debt (PSD), consolidated, as % of GDP
- Total financial sector liabilities (TFSL), non-consolidated, 1 year % change

Financial accounts are an area of shared responsibility between the ESS and the ESCB.

#### A. INSTITUTIONAL ISSUES

##### i) *Legal basis*

Quarterly financial accounts are mostly compiled by NCBs and transmitted to the ECB based on the 'Guideline ECB/2013/24' (henceforth the "MUFA Guideline"), which foresees compliance with the principles and definitions of the ESA 2010 and the information breakdowns necessary to meet the exercise of the ESCB's tasks.

Annual financial accounts are compiled according to the requirements of ESA 2010, in terms of principles and definitions, as well as information detail. Annual financial accounts data are transmitted to Eurostat in the framework of the ESA transmission programme (Annex B of ESA 2010).

##### ii) *Quality assurance mechanisms*

Since 2017 several actions for the improvement of the quality of the financial accounts datasets have been jointly undertaken by Eurostat and ECB, mostly in the context of the implementation of the Memorandum of Understanding (MoU). This has also further strengthened the close cooperation between the two institutions and the ESS and the ESCB.

An annual quality report on the quarterly financial accounts is required by Article 7 of the MUFA Guideline. It follows the principles of the ECB Statistics Quality Framework (SQF)<sup>42</sup>. It assesses the quality of the data according to the following dimensions: relevance, accuracy, timeliness punctuality, accessibility and clarity, comparability and coherence. Furthermore, a special section (box) focusing on the quality assessment of the data used for MIP purposes has been introduced. The ECB report was made available to the public for the first time in June 2018, on the ECB website.

The ESA 2010 sets the requirement that each Member State provides a report on the quality of the transmitted data (Article 4(2)), including annual financial accounts (ESA tables 6 and 7), and a first set of reports was prepared in 2017. The exercise was repeated in 2018 with indicators on quality being limited to data completeness and timeliness. In the 2019 exercise, the quantitative indicators on quality of financial accounts were extended to coherence between non-financial and financial accounts and revision rates in financial accounts. However, the indicators are being expanded over time and a new set of country reports on the quality of ESA 2010 data are due to be completed in mid-2020.

The quality reporting framework for financial accounts is further complemented by the national level 3 quality or 'self-assessment' reports that provide metadata on national financial accounts including descriptions on the compilation practices, sources and methods are published at the national and/or the CMFB website. The reports of all EU countries are available on the dedicated section of the CMFB website.<sup>43</sup>

<sup>41</sup> In addition, the auxiliary indicator Household debt, consolidated (including NPISH) as % of GDP is also based on annual financial accounts.

<sup>42</sup> <http://www.ecb.europa.eu/pub/pdf/other/ecbstatisticsqualityframework200804en.pdf>

<sup>43</sup> <https://www.cmfb.europa.eu/main-topics/mip-quality>

The quarterly national financial accounts data transmissions are regularly checked for completeness, internal consistency, as well as for external consistency with related statistics (e.g. non-financial sector accounts, money and banking statistics, investment funds statistics, insurance corporation statistics and balance of payments statistics).

Validation of annual financial accounts transmissions by Eurostat involves internal consistency and other checks on the data. Work on revision analysis and comparability with other datasets is also undertaken, as well as monitoring for compliance with the ESA transmission programme. In annual financial accounts, completeness rates remained very high, and are above 97% for all Member States. Concerning timeliness, annual financial accounts were transmitted by 23 Member States on time at T+9 months, or else in advance. In several cases, countries provide a quarterly update of the annual accounts. Vertical discrepancies were high for all sectors except for the general government, with the highest discrepancies observed for the non-financial corporations and households.

### *iii) Policy uses*

Private debt indicators allow for an assessment of the private sector vulnerability to changes in the business cycle, inflation and the interest rate. Large credit fluctuations are often associated with potential banking system vulnerabilities, boom and bust cycles in asset markets, house price bubbles, current account imbalances. Practice suggests that high credit flows are one of the best indicators to predict a crisis incidence early on. It is widely used by the Commission in the economic analysis of the EU Member States.

Quarterly financial accounts are used to supplement the monetary policy analysis of the ECB, because, in particular for households and non-financial corporations, no alternative comprehensive and timely data sources exist. In addition, the financial crisis has greatly increased the analytical interest, from users in particular, in national data for financial stability and macro-prudential analysis of individual Member States. This has resulted in the inclusion of financial accounts data, in particular of comprehensive debt measures, similar to those of the MIP, in the European Systemic Risk Board (ESRB). These indicators can be published on a quarterly basis as almost all euro area countries and most other EU countries have made the core set of quarterly national financial accounts available for publication.

Annual financial accounts are most appropriate for structural analyses, for example of trends in lending and borrowing, in equity participation, in the build-up of asset price bubbles, and in longer term changes in debt positions. They are therefore suitable for the type of structural analysis needed in the MIP, where a long-term perspective is required.

Further demands are part of the G-20 Data Gaps Initiative (in particular Recommendation 8 of the second phase of the initiative) and the G-20 Mutual Assessment Process (MAP).

## **B. COMPILATION PROCESS**

There is a close alignment of the quarterly (the recast MUFA Guideline) and annual (the ESA 2010 Transmission Programme) data requirements in terms of financial instrument and sector detail although the consolidated tables remain more complete for the annual data. The reporting time lag for the annual data remains officially 9 months (although some countries report much earlier and more frequently than once a year), and 97 days for quarterly national data.

The compilation of financial accounts data differs substantially between the sectors for which source data are generally directly available – that is the government and large part of the financial corporation sectors, on the one hand – and, on the other hand, the sectors for which more limited and less timely direct source data are available – the household (and NPISH) and the non-financial corporation sector. For the latter sectors, timely data are generally available from (financial) counterpart sector information and from financial market information (e.g. security issuance). Compilation of the data for the MIP headline indicators on consolidated Private sector credit flow (PSCF), and debt (PSD), as well as the new auxiliary indicator on

consolidated Household debt, is largely based on these harmonised data sources on loans granted (or held) by the financial counterpart sectors and security issues statistics.

By contrast, the compilation of financial sector liabilities, in particular SPEs and, more general, Other financial institutions (OFIs), is affected by limited data source availability. Due to the heterogeneity of the entities, OFIs are only partially covered by euro area or EU wide statistical reporting requirements. Cross-checking with business registers or the use of other methods to ensure full coverage of OFIs could be taken into account for further improvements in Germany and Poland. In Croatia, there is partial coverage of assets and liabilities of OFIs that are not supervised by the NCB or the financial markets supervisory authority. For those OFIs, coverage is limited to data available from counterparty statistics of the covered financial institutions (S12 entities). The Netherlands has already significantly improved the OFI coverage and work is ongoing to complete it. In Sweden it is difficult to determine the coverage for particular OFI sub-sectors, groups of entities or instruments from the existing data sources. This may mean that these data are not fully covered – it is also not possible to estimate the missing data.

There is an increasing collaboration between the NCBs and NSIs, to integrate the quarterly and the annual financial accounts with the non-financial sector accounts mostly produced by NSIs in the EU. In pursuing progress in this field, it may be expected that vertical discrepancies between the non-financial and financial accounts will progressively be reduced. As part of quality assurance, Eurostat and the ECB are monitoring the coherence between these datasets closely.

## C. QUALITY ASSESSMENT OF OUTPUT

### i) Accuracy and reliability

The compilation of financial accounts in EU Member States is based on the ESA 2010. Financial accounts data for the large part of the financial corporations (e.g. MFIs, Investment Funds, Insurance Corporations and Financial Vehicle Corporations engaged in securitisation. Pension Funds) and general government sectors are based on statistical Regulations<sup>44</sup> directly addressed to the reporting agents and therefore use direct statistical sources, which produce high quality and largely harmonized data within the EU. Financial accounts data for the non-financial corporation and household sectors (referred to as “private” sectors as in the context of the MIP scoreboard indicators) and part of the financial corporations sector related to OFIs rely less on raw data directly collected from these sectors but on information available to the compiler from their (financial) counterpart sectors and from financial market information. However, information on securities issues and holdings for all sectors, including for non-financial corporations, are also collected by means of statistical legal acts, including regulations addressed directly to custodians and end-investors, and therefore provide high quality information for these entries in the financial accounts statistics.

#### – Revisions

Financial accounts are compiled by integrating statistical data from several sources. While BoP/IIP should follow the Harmonised European Revision Policy (HERP), availability and revision practices of other data sources may be different in some cases. The incorporation of revisions from these data sources and the

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<sup>44</sup> ECB Regulations impose statistical reporting obligation on MFIs, Investment funds, Financial vehicle corporations engaged in the securitisation of assets (FVCs) and Insurance corporations and Pension funds resident in the euro area:

Regulation (EU) No 1071/2013 of the ECB of 24 September 2013 concerning the balance sheet of the monetary financial institutions sector (recast) (ECB/2013/33), OJ L 297, 7.11.2013, p. 1.

Regulation (EU) no 1073/2013 of the ECB of 18 October 2013 concerning statistics on the assets and liabilities of investment funds (recast) (ECB/2013/38), OJ L 297, 7.11.2013, p. 73.

Regulation (EU) no 1075/2013 of the ECB of 18 October 2013 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (recast) (ECB/2013/40), OJ L 297, 7.11.2013, p. 107.

Regulation (EU) No 1374/2014 of the ECB of 28 November 2014 on statistical reporting requirements for insurance corporations (ECB/2014/50), OJ L 366, 20.12.2014, p. 36.

Regulation (EU) No 2018/231 of the ECB of 26 January 2018 on statistical reporting requirements for pension funds (ECB/2018/2), OJ L 45, 17.2.2018, p. 3.

implementation of back data-related amendments to compilation methods should in principle be in line with HERP as well. Particular attention is needed to avoid any discontinuity in the time series when doing so.

In general, revisions to Private sector credit flow and debt are mostly related to non-financial corporation (NFC) loan financing, whereas revisions to household loan financing and NFC debt securities issuance tend to be lower. For Total financial sector liabilities, the revisions are often associated with improved data for OFIs. Further, many Member States have implemented benchmark revisions in 2019. For Total financial sector liabilities, large revisions were observed in 2019 for Denmark Luxembourg, Cyprus, Malta, the Netherlands, Ireland and Estonia. For consolidated Private sector debt, revisions were particularly high as a percentage of GDP for Denmark, Ireland, France, Cyprus, Latvia, the Netherlands, Luxembourg, Malta and Sweden. For consolidated Private sector debt of household and NPISH sector, revisions were high for Bulgaria, Denmark, Belgium, Estonia, Ireland, Cyprus, Latvia, Luxembourg and Malta.

– Vertical discrepancies

The absolute values of vertical discrepancies, averaged over the period 2013 to 2017, were over 11% of GDP for Malta (S.12, S.14) and Romania (S.11, S.14) and over 5% of GDP for Bulgaria (S.11, S.14), Greece (S.11), Latvia (S.14), Lithuania (S.11) and Poland (S.11, S.14).

ii) *Comparability*

The national financial accounts are generally consistent with the requirements and conceptual framework of the ESA 2010. However the financial account statistics are derived statistics that rely on a wide range of data sources. A significant part of the data sources are those covered by harmonised ESCB statistics for financial sub-sectors and securities. For parts of the accounts which are not covered by these statistics sources are not necessarily complete or fully sufficient in terms of conceptual requirements. In such cases source data are supplemented with estimations or residual calculations in order to ensure the completeness of the accounts. One area where the compilation of the financial accounts data underlying the MIP indicators is particularly affected by limited data sources is the coverage of 'Other financial institutions' (OFIs), for which there are generally no timely and comprehensive source statistics in place. Assessing and, where necessary, improving the quality of data related to OFIs is a priority for the work on financial accounts (For more information on consistency between national accounts and BoP/IIP see III.2.2).

### III.3.3 GOVERNMENT FINANCE STATISTICS

The following headline indicator based on government finance statistics is included in the MIP:

- **General government gross debt (GGGD) as % of GDP.**

#### A. INSTITUTIONAL ISSUES

##### i) *Legal basis*

For the purpose of the Excessive Deficit Procedure (EDP) in the Economic and monetary union (EMU), as well as for the Growth and Stability Pact, Protocol 12, annexed to the Treaty on the Functioning of the European Union, provides a definition of government debt: "Debt means total gross debt at nominal value outstanding at the end of the year and consolidated between and within the sub-sectors of general government". This definition is supplemented by Council Regulation (EC) No 479/2009<sup>45</sup> specifying the components of government debt with reference to the definitions of financial liabilities in ESA 2010 and that the nominal value corresponds to the face value of liabilities.

In this context, the stock of government debt in the Excessive Deficit Procedure (EDP debt) is equal to the consolidated sum of liabilities, at the end of year N, of all units classified within the general government sector (S.13) in the following categories: AF.2 (currency and deposits) + AF.3 (debt securities) + AF.4 (loans).

The Council Regulation requires all EU countries to report EDP data twice a year (before 1 April and 1 October) to Eurostat. The Council Regulation also requires that Member States transmit to Eurostat inventories to describe the sources and methods used for compiling the reported data<sup>46</sup>.

##### ii) *Quality assurance mechanisms*

Council Regulation (EC) 479/2009 stipulates that the "*Commission (Eurostat) shall regularly assess the quality both of actual data reported by Member States and of the underlying government sector accounts compiled according to ESA 2010*" and that the "*Commission (Eurostat) shall report regularly to the European Parliament and to the Council on the quality of the actual data reported by Member States. The report shall address the overall assessment of the actual data reported by Member States as regards to the compliance with accounting rules, completeness, reliability, timeliness, and consistency of the data.*"

EDP data is thoroughly verified by Eurostat. This assessment concerns factors that explain the general government deficit / surplus and changes in general government debt. Member States notify EDP data to Eurostat twice a year, by transmitting "EDP notification tables" as well as supplementary information included in the "Questionnaire related to the EDP notification" and the "Supplementary tables for reporting government interventions to support financial institutions". The notification is followed by a period of bilateral clarification between Eurostat and Member States. In addition to that, Eurostat maintains an overview of EDP relevant issues in Member States through regular "EDP dialogue visits".

##### iii) *Policy uses*

The general government debt plays an important role in the framework of the Stability and Growth Pact (SGP). The SGP contains two arms – the preventive arm and the corrective arm. The preventive arm seeks to ensure that fiscal policy is conducted in a sustainable manner over the cycle. The corrective arm sets out the framework for countries to take corrective action in the case of an excessive deficit.

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<sup>45</sup> Council Regulation (EC) No 479/2009 of 25 May 2009 on the application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community, *OJ L 145, 10.6.2009, p. 1.*

<sup>46</sup> The so-called EDP inventories are available on the [Eurostat website](#).

The corrective arm is made operational by the Excessive Deficit Procedure (EDP), a procedure to correct excessive deficits that occur when one or both of the rules - that the deficit must not exceed 3% of GDP and public debt must not exceed 60% of GDP (or, if exceeded, decrease sufficiently towards 60%) as defined in the Treaty on the Functioning of the EU - are breached. Non-compliance with either the preventive or corrective arm of the Pact can lead to the imposition of sanctions for euro area countries. In the case of the corrective arm, this can involve annual fines for euro area Member States and, for all countries, possible suspension of Cohesion Fund financing until the excessive deficit is corrected.

## B. COMPILATION PROCESS

The data are mainly compiled from public accounts, other administrative data and questionnaires. A limited amount of indirect data is also used for the compilation of financial accounts, but generally not for the compilation of general government gross debt at face value. The detailed sources and methods for each Member State can be found on the Eurostat website within the published EDP inventories.

## C. QUALITY ASSESSMENT OF OUTPUT

### (i) Accuracy and reliability

In recent reports sent to the European Parliament on the fiscal data reported by Member States, Eurostat noted the good overall quality of the reporting of fiscal data. Improvement is still expected with respect to the coverage and quality information on trade credits and in the consistency with the quarterly financial accounts for general government as well as for the work to update the EDP inventories. In general, consistency with the underlying general government sector data (GFS) remained very high, including for quarterly government debt. Exceptions to this are the data reported by Denmark (for non-financial and financial accounts) and Greece (in comparison with quarterly financial accounts reported by Bank of Greece).

#### – Revisions

In general, EDP statistics take on board updated, more detailed and more accurate data sources without delay. Methodological improvements and correction of errors should similarly not be delayed.

### ii) Comparability

In general, Member States continuously provide good quality information, both in EDP notification tables and in other relevant statistical returns. Moreover, Eurostat is closely monitoring the system for the reporting by autonomous regions and the recording of interventions undertaken by government in the context of the financial crisis (bank recapitalisations).

### III.3.4 LABOUR MARKET STATISTICS

The MIP scoreboard includes the following indicators:

- Unemployment rate (UR), 3 year average
- Activity rate (AR), % of population aged 15-64 years, 3 year change in pp
- Long-term unemployment rate (LTUR), % of active population aged 15-74, 3 year change in pp
- Youth unemployment rate (YUR), % of active population aged 15-24, 3 year change in pp

#### A. INSTITUTIONAL ISSUES

##### *i) Legal basis*

The principal legal act governing the EU-LFS implementation is Council Regulation (EC) No. 577/98<sup>47</sup>. The implementation rules are specified in the successive Commission regulations. This is the main regulation with provisions on design, survey characteristics and decision making processes. The regulation holds only for quarterly and yearly data, but not for monthly data.

All indicators are based on the International Labour Organization (ILO) definitions: the labour force is defined as the total number of people employed or unemployed, while unemployed persons comprise persons aged 15 to 74 who meet the following three criteria: did not work during the reference week, are available to start work within the next two weeks and have been actively seeking work in the past four weeks, or had already found a job to start within the next three months.

From these two concepts the following indicators are derived: the unemployment rate is the number of unemployed persons as a percentage of the labour force; the long-term unemployment rate is limited to the persons unemployed from 12 months or more; the youth unemployment rate has the same definition of the unemployment rate but calculated only for the 15-24 age class both for the unemployed and for the labour force; and finally the activity rate is the total labour force as percentage of the population for the 15-64 age class.

The data used to calculate the triannual averages of the unemployment rate are the Unemployment-LFS adjusted series. These series form a collection of monthly, quarterly and annual series that are benchmarked on the quarterly results of the EU Labour Force Survey (EU-LFS) and, where necessary, adjusted for breaks in the series. The unemployment rate scoreboard indicator is a three-year backward moving average, i.e. the data for year *t* is the arithmetic average of the indicator at year *t*, *t*-1 and *t*-2. The other three indicators, activity rate, long-term unemployment rate, and youth unemployment rate, are calculated as the three years change in percentage points, i.e. the simple difference of the indicators at year *t* and *t*-3.

##### *ii) Quality assurance mechanisms*

The Labour Force Survey legislation requires that a regular report on its implementation is prepared every three years, by the Commission for the European Parliament and the EU Council. To monitor the quality of the EU Labour Force Survey (EU-LFS) the following reports are drafted: Description of the characteristics of national surveys (annual), Quality report (annual) and Commission report to the Council and the Parliament (triennial)<sup>48</sup>. Reports are public and available on Eurostat website. Those quality reports can be considered of high level, covering inventory of methodologies, analysis of the quality and data comparability.

<sup>47</sup> Council Regulation (EC) No 577/98 of 9 March 1998 on the organisation of a labour force sample survey in the Community: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:31998R0577>

<sup>48</sup> All these reports are available at <http://ec.europa.eu/eurostat/web/lfs/publications/quality-reporting>.

### *iii) Policy uses*

The EU-LFS is the most important source of official statistics on labour markets in the European Union. Some key EU policy initiatives rely on EU-LFS data to monitor progress. For example two of the five Europe 2020 headline targets are monitored with LFS and many other LFS-based indicators are used under the Europe 2020 Joint Assessment Framework. The LFS-based monthly unemployment rate is an important short-term economic indicator.

## **B. COMPILATION PROCESS**

The EU-LFS is a quarterly survey used to produce the annual figures underlying MIP headline indicators. In order to produce monthly unemployment rates, non-seasonally adjusted quarterly averages of monthly series are benchmarked to quarterly LFS figures for all countries. The calculation method of the actual and provisional figures (i.e. for the periods when LFS data are not yet available) depends on the availability and specific characteristics of the sources available in individual Member States, since monthly figures are not under regulation. Eurostat aims at harmonising the calculation process as much as possible.

Apart from quarterly figures, in some Member States, monthly and/or 3 month moving averages are produced from the LFS as well. Registered unemployment data which come from administrative sources are used for many Member States as auxiliary source. A new quality framework for monitoring the output became operational during 2016 in order to assure uniform quality even if the production process varies among countries. This quality check tests the number of anomalous double changes in direction and the magnitude of the revisions.

Annual averages of the quarterly data, in levels, are produced as simple averages of the quarterly levels. Rates are then calculated from the averaged levels according to their formula.

Adjusted data takes into consideration methodological differences that could harm the comparability among countries. For the most recent years the two series (before and after adjustment) converge, due to the implementation of a continuous quarterly survey and the improved quality of the data. For a few countries the figures in the two collections diverge also for years after 2005. This is due to the need to correct breaks in time series introduced by incorporating the 2011 Census results into the weighting of the LFS series. Usually, NSIs recalculate the most recent part of the time series, while Eurostat recalculates the older parts. When NSIs transmit break-free series for quarterly LFS data only, Eurostat recalculates the monthly series so that they match the revised quarterly figures. The end of Eurostat's recalculated period for the monthly, the quarterly and the yearly data is reported (flagged with "i" in Eurostat's database).

## **C. QUALITY ASSESSMENT OF OUTPUT**

### *i) Accuracy and reliability*

The overall accuracy of EU-LFS is high. The LFS covers persons living in private households to ensure a comparable coverage for all countries. The sampling designs in the LFS are chosen on a country by country basis. Regardless of the sampling method or which age groups are interviewed, the data records at Eurostat are representative for the population aged 15-74 (16-74 in Iceland, the United Kingdom, Italy and Spain).

The results are based on a sample of the population and they are subject to the usual types of errors associated with sampling techniques and interviews. Sampling errors, non-sampling errors, measurement errors, processing errors and non-response are calculated for each country and documented in the Quality Report of the European Union Labour Force Survey.

Two of the most important indicators for the assessment of non-sampling error of the LFS are unit non-response rate and the proxy rate. For the first one, the lower the unit non-response rate is, the more accurate the survey, as the indicator shows the level of the missing information through the ratio of the number of units for which data for no variable have been collected to the total number of units designated

for data collection. In the last five years, LFS has been affected by a slight increase of the unit non-response rate which amounted to 27.2% in 2018, with respect to 23.5% in 2013. In particular, the unit non-response rate varies among countries from the 3.4% of the Germany to the 51.1% of the United Kingdom. The two median countries are Czechia (22.4%) and Hungary (24.5%). One cause of such a difference may be that the LFS is not a compulsory survey in all countries, which means that in several countries there is not a legal obligation for the citizens to answer the survey, so in general countries in which the survey is not compulsory have higher unit non-response rates. As for the proxy rate, it is the percentage of proxy interviews among all interviews where a proxy interview is an interview with someone (e.g. one member of the household) other than the person from whom information is being sought, so a lower proxy rate means the survey is more accurate because more information is directly collected from the concerned person. Over the last five years the proxy rate in the EU-LFS has worsened as it shows an increase from 30.4% in 2013 to 33.3% in 2018. By country, the proxy rate varies from 0.0% in Luxembourg, to 54.2% in Slovenia. In this case the large difference is due to the sample unit of the survey: in countries in which the sample unit is the individual person the proxy rate is much lower, while in countries in which the sample unit is the entire household, the proxy rate is higher, since a person can answer to the questions for the other members of the same household. Countries which have individual person sample units are: Luxembourg, Sweden, Finland and Denmark (the maximum in Denmark is 6.7%). Among the other countries, the smallest proxy rate is in Estonia (16.3%).

LFS figures fulfil the Eurostat requirements concerning reliability.

#### – Revisions

The complete time series are re-calculated with every data transmission. There are 12 transmissions per year for monthly data and 4 for quarterly and annual data. In each one of those releases previously released data can be revised. Every month new figures from the public employment offices, administrative registers, or from the EU-LFS are added into the process and new estimates are calculated. This might cause a slight revision to the past figures due to the re-execution of the seasonal adjustment procedure. Occasional revisions may be caused by methodological changes in the production.

In 2018 no country has been affected by major changes. The new Framework Regulation for the production of European statistics on persons and households (Integrated European Social Statistics - IESS)<sup>49</sup>, covering also the LFS, has been approved during 2019 and NSIs already started working on its implementation due at the beginning of 2021. All needed changes in the survey (required or not by the IESS) will be introduced simultaneously in the first quarter of the 2021, in order to avoid multiple consecutive breaks.

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<sup>49</sup> Regulation (EU) 2019/1700 of the European Parliament and of the Council of 10 October 2019 establishing a common framework for European statistics relating to persons and households, based on data at individual level collected from samples, amending Regulations (EC) No 808/2004, (EC) No 452/2008 and (EC) No 1338/2008 of the European Parliament and of the Council, and repealing Regulation (EC) No 1177/2003 of the European Parliament and of the Council and Council Regulation (EC) No 577/98. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.LI.2019.261.01.0001.01.ENG>

ii) *Comparability*

Council regulation (EC) No 577/98, common variable definitions<sup>50</sup>, common explanatory notes<sup>51</sup> and a Commission regulation regarding the operational definition of labour statuses and the twelve principles of questionnaire construction<sup>52</sup> ensure comparability of the statistics across countries. While harmonization of certain breakdowns could be further improved across countries, the unemployment data are of high quality and in particular of high comparability.

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<sup>50</sup> Commission Regulation (EC) No 377/2008 of 25 April 2008 implementing Council Regulation (EC) No 577/98 on the organisation of a labour force sample survey in the Community as regards the codification to be used for data transmission from 2009 onwards, the use of a sub-sample for the collection of data on structural variables and the definition of the reference quarters, *OJ L 114*, 26.4.2008, p. 57: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32008R0377>.

<sup>51</sup> <http://ec.europa.eu/eurostat/documents/1978984/6037342/EU-LFS-explanatory-notes-from-2014-onwards.pdf>.

<sup>52</sup> Commission Regulation (EC) No 1897/2000 of 7 September 2000 implementing Council Regulation (EC) No 577/98 on the organisation of a labour force sample survey in the Community concerning the operational definition of unemployment, *OJ L 228*, 8.9.2000, p. 18: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32000R1897>.

## IV. ANNEX II – MIP SCOREBOARD INDICATORS

Indicator	Statistical domain
Current account balance as % of GDP, 3 year average	BoP-IIP / NA
Net international investment position as % of GDP	BoP-IIP / NA
Real effective exchange rate, 42 trading partners, HICP/CPI deflator, 3 year % change	
Export market share as % of world exports, 5 year % change	BoP-IIP
Nominal unit labour cost (2010=100), 3 year % change	NA
House prices index (2015=100), deflated, 1 year % change	Housing price statistics-NA
Private sector credit flow as % of GDP, consolidated	FA / NA
Private sector debt as % of GDP, consolidated	FA / NA
General government gross debt (EDP) as % of GDP	EDP / GFS
Unemployment rate, 3 year average	LFS
Total financial sector liabilities, non-consolidated, 1 year % change	FA
Activity Rate, % of total population aged 15-64 years, 3 years change in pp	LFS
Long-term Unemployment rate, % of active population aged 15-74, 3 years change in pp	LFS
Youth Unemployment Rate, % of active population aged 15-24, 3 years change in pp	LFS

Note: **NA**: National accounts; **BoP**: Balance of payments; **IIP**: International investment position; **FA**: Financial accounts; **EDP / GFS**: Excessive deficit procedure / Government finance statistics; **LFS**: Labour Force Survey / Labour market survey.

## V. ANNEX III – MIP AUXILIARY INDICATORS<sup>53</sup>

- Real GDP as 1 year % change
- Gross fixed capital formation as % of GDP
- Gross domestic expenditure on R&D as % of GDP
- Current plus capital account (Net Lending/Borrowing) as % of GDP
- Net international investment position excluding non-defaultable instruments as % of GDP
- Foreign direct investment in the reporting economy - flows as % of GDP
- Foreign direct investment in the reporting economy - stocks as % of GDP
- Net trade balance of energy products as % of GDP
- Real effective exchange rates – Euro Area trading partners as 3 year % change
- Export performance against advanced economies as 5 year % change
- Terms of trade as 5 year % change
- Export market share in volume as 1 year % change
- Labour productivity as 1 year % change
- Gross non-performing loans of domestic and foreign entities as % of gross loans<sup>54</sup>
- Unit labour cost performance related to EA as 10 year % change
- House price index (2015 = 100) - nominal as 3 year % change
- Residential construction as % of GDP
- Household debt, consolidated (including NPISH) as % of GDP
- Consolidated banking leverage, domestic and foreign entities as total assets/total equity<sup>55</sup>
- Employment as 1 year % change
- Activity rate as % of total population aged 15-64
- Long term unemployment rate as % of active population aged 15-74
- Youth unemployment rate as % of active population aged 15-24
- Young people neither in employment nor in education and training as % of total population aged 15-24
- People at risk of poverty or social exclusion as % of total population
- People at risk of poverty after social transfers as % of total population
- Severely materially deprived people as % of total population
- People living in households with very low work intensity as % of population aged 0-59

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<sup>53</sup> The list of auxiliary indicators has changed in 2018, see the 2019 Statistical Annex for more information about the changes: [https://ec.europa.eu/eurostat/documents/16624/0/2019\\_Statistical\\_Annex](https://ec.europa.eu/eurostat/documents/16624/0/2019_Statistical_Annex)

<sup>54</sup> Source: European Central Bank (ECB)

<sup>55</sup> Source: European Central Bank (ECB)

## VI. LIST OF ABBREVIATIONS

BIS	Bank of International Settlements
BoP	Balance of Payments
BPM6	IMF Balance of Payments and International Investment Position Manual 6th Edition
CDIS	IMF Coordinated Direct Investment Survey
CPI	Consumer Price Index
CPIS	IMF Coordinated Portfolio Investment Survey
CSDB	Centralised Securities Database
EC	European Commission
ECB	European Central Bank
EDP	Excessive Deficit Procedure
EICP	European Index of Consumer Prices
EMU	Economic and Monetary Union
ESA 2010	European System of National and Regional Accounts 2010
ESA2010 TP	Transmission Programme under the ESA 2010
ESCB	European System of Central Banks
ESRB	European Systemic Risk Board
ESS	European Statistical System
EU	European Union
FIGARO	Full International and Global Accounts for Research in Input-Output Analysis
FVC	Financial Vehicle Corporations engaged in securitisation transactions
GDP	Gross Domestic Product
GNI	Gross National Income
HICP	Harmonised Index of Consumer Prices
HPI	Housing Price Indices
IIP	International Investment Position
ILO	International Labour Organization
LFS	Labour Force Survey
MFI	Monetary Financial Institution
MIP	Macroeconomic Imbalance Procedure
MUFA	Monetary Union Financial Accounts
MUICP	Monetary Union Index of Consumer Prices
NCB	National Central Bank
NPISH	Non-Profit Institutions Serving Households
NSI	National Statistical Institute
OECD	Organisation for Economic Cooperation and Development
OJ	Official Journal (of the European Union)
REER	Real Effective Exchange Rate
SNA 2008	System of National Accounts 2008
SPE	Special Purpose Entity
ULC	Unit Labour Cost