

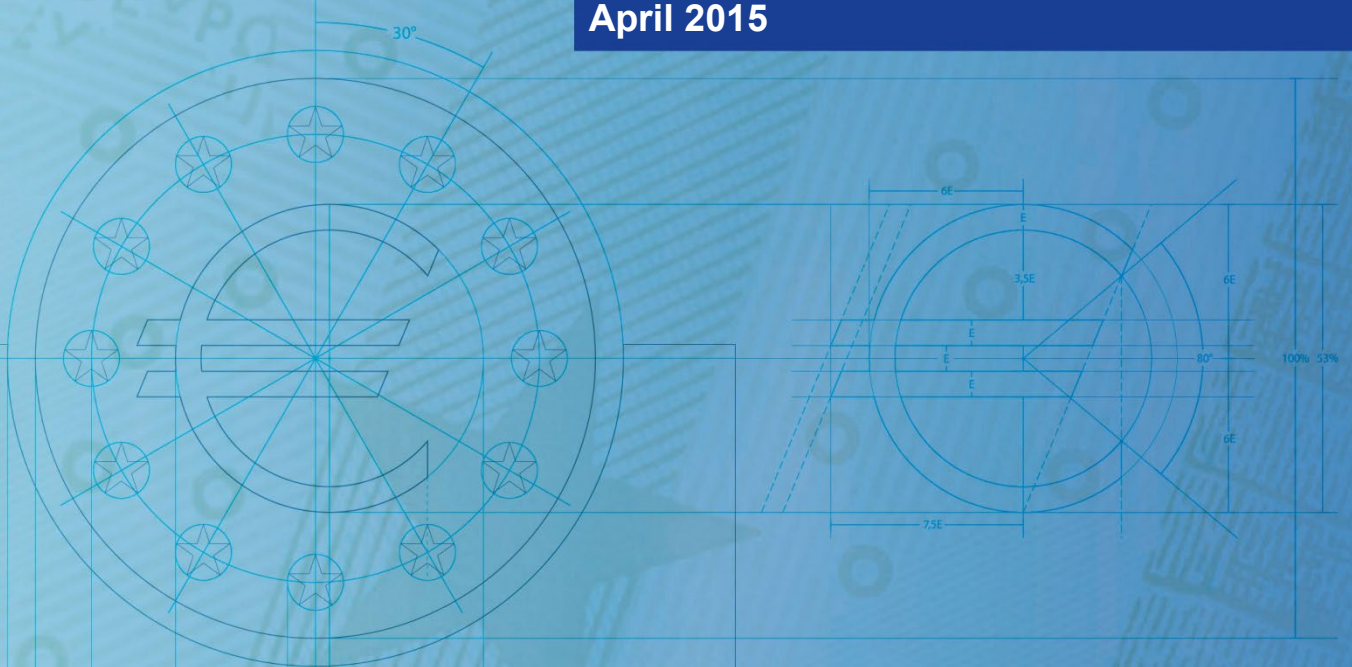


EUROPEAN CENTRAL BANK
EUROSYSTEM

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2014 quality report

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Summary

This biennial data quality report is a contribution to the European Central Bank (ECB) Statistics Quality Framework (SQF).¹ It focuses on the collection, compilation and dissemination of monetary and financial statistics (MFS) relevant for the euro area in 2013 and 2014. Following the basic principles set out in the “Public commitment on European statistics by the ESCB”,² this report provides descriptive and quantitative quality indicators. It is divided into three sections: Section 1 – Institutional environment – highlights the recently implemented regulatory updates, Section 2 – Statistical processes – presents the main operational undertakings since 2013 and Section 3 – High output quality – provides the quantitative results of the data quality analysis.

With regard to the institutional environment, the ECB reviewed and expanded its legal framework considerably in 2013 and 2014 to enable the production of new and enhanced MFS. A major accomplishment was the recast of five significant Regulations (ECB/2013/33, ECB/2013/38, ECB/2013/40, ECB/2013/39 and ECB/2013/34) and one Guideline (ECB/2014/15) which concern balance sheet statistics relating to monetary financial institutions (MFIs), investment funds (IFs) and financial vehicle corporations engaged in securitisation transactions (FVCs), reporting requirements for post office giro institutions (POGIs), as well as MFI interest rates (MIR) statistics. This recast allowed the implementation of new statistical standards, in particular the new European System of Accounts (ESA 2010)³, to be accommodated. Collection of the new data started in January 2015 and the first publication is scheduled for the second half of 2015. There are two main improvements.

- As regards statistics on balance sheet items of MFIs, IFs, FVCs and POGIs, the new data requirements provide for a more granular breakdown, notably in terms of counterparty sectors, instrument categories and original maturity. Furthermore, it will now be possible to directly identify financial derivatives and accrued interest from the MFI balance sheet statistics.
- As regards MIR statistics, renegotiated loans will now be distinguished from new business, which includes both new loans and renegotiated agreements. Other improvements are related to additional breakdowns by remaining maturity and next interest rate reset period.

In addition, there were important developments in the area of payments statistics with the adoption of Regulation ECB/2013/43, which since 2014 has provided for, among

¹ ESCB Statistics Quality Framework, available at: <https://www.ecb.europa.eu/stats/html/sqf.en.html>

² “Public commitment on European statistics by the ESCB”, available at: <https://www.ecb.europa.eu/stats/html/pcstats.en.html>

³ ESA 2010, available at: <http://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/KS-02-13-269>

other things, the collection and publication of harmonised and more detailed data in relation to the implementation of the Single Euro Payments Area (SEPA).

In the area of money markets, the ECB issued a new Regulation (ECB/2014/48) for collecting daily transactional data on euro money market instruments in relation to four market segments: secured, unsecured, foreign exchange swaps and euro overnight index swaps.

The regulatory framework was also enhanced with the adoption of Regulation ECB/2014/50, dedicated to statistical reporting requirements for insurance corporations, and Guideline ECB/2014/15 for pension funds. Accordingly, additional data on insurance corporations and pension funds will be collected from 2016 onwards.

Finally, the ECB also adopted Decision ECB/2014/6 on the organisation of preparatory measures for the collection of granular credit data (AnaCredit) by the European System of Central Banks (ESCB), which is considered crucial for monetary policy analysis, macro-prudential policy analysis, financial stability, banking supervision and research.

With regard to statistical processes, the collection, processing and dissemination of MFS went smoothly during 2013 and 2014. Overall, the data published remained of very high quality and fit for policy needs. In this context, the following undertakings are worth mentioning.

- The ECB, together with the NCBs, launched a survey in late 2013 to gather information on national practices for compiling MFI balance sheet items statistics in order to identify benchmark practices. A report is scheduled for publication in the course of 2015.
- Improving the proper recording of FVCs within the Centralised Securities Database (CSDB) has made it possible to acquire further granularity on the interconnections between FVCs and other sectors, which is useful not least in the analysis of shadow banking, i.e. bank-like financial intermediation which takes place outside the regular banking system.
- The ESCB Internal Auditors Committee, after conducting an audit on MIR statistics during the first half of 2014, provided the overall opinion that “the risk management, controls and governance processes related to the production of the MIR statistics are sufficiently effective.”
- The Register of Institutions and Affiliates Database (RIAD) system has been enhanced by enabling a fully automated and streamlined dataflow, now allowing online connections and reduced transmissions of changes. It has been further transformed to comply with the Eurostat Business registers Recommendations

manual⁴ and adapted to cover the identification and monitoring of “close links” between specific organisational units that are relevant to monetary policy.

- In 2014 the ESCB started to collect securities holdings statistics (SHS), which offer a wide range of breakdowns on the issuer and holder sides not available in other statistics. This new dataset facilitates a more detailed analysis, providing a clearer picture of maturity breakdown and holdings, which will apply to a range of monetary statistics including MFI balance sheet, IF and FVC statistics.

With regard to “high output quality”, analyses of revisions were performed to evaluate the reliability of the first releases of euro area monetary aggregates, including the broad aggregate M3, and of the euro area aggregates for MFI interest rate indicators.

According to the analysis, the impact of revisions on the month-on-month growth rates of the three main euro area monetary aggregates (M3, M2 and M1) continues to be very limited. Overall, 58% of all revisions received up until 2014 had an impact lower or equal to five b.p. (five b.p. = 0.05 p.p.) on any of the three growth rates published since 2005. If only the revisions received since the end of 2012 are considered, the ratio increases to 67%. The impact of revisions on any growth rate after one year is on average lower than +/-9.5 b.p. since 2005 and 5.7 b.p. since the end of 2012.

In summary, the impact of revisions is sufficiently small that the month-on-month growth rates are fit for policy needs on their initial publication. The revisions received since the end of 2012 have also had a smaller impact on growth rates in comparison with all previous years since 2005 taken together.

Around 80% of all revisions to MIR indicators were less than or equal to ten b.p., which is in line with the requirement set out in Regulation ECB/2013/34. The absolute mean of revisions is 5.8 b.p. overall and the bias (simple mean) is +2 b.p., all time lags considered. Furthermore, the number of revisions was 83, which is very small compared with the number of indicators used for the analysis and the potential number of reference periods reviewed in the analysis (from January 2003 to September 2014).

Overall, in comparison with the number of observations received, the number and size of revisions for the MFI interest rate statistics at the euro area level are small, which demonstrates their high reliability. The number and type of revisions received also show that these statistics are continuously being updated, which is important for ensuring proper accuracy.

⁴ Eurostat Business Registers Recommendations Manual, available at: <http://ec.europa.eu/eurostat/ramon/statmanuals/files/KS-32-10-216-EN-C-EN.pdf>

Introduction

In line with the mission statement of the Eurosystem,⁵ the ECB is committed to adhering to values such as credibility, trust, transparency and accountability, which underpin the integrity of the statistical function provided by Article 5 of the Statute of the European System of Central Banks and of the European Central Bank as defined by the Treaty on the Functioning of the European Union.⁶ Adherence to high-quality statistical standards is a key factor in maintaining the public's confidence in ESCB statistics, upon which monetary policy decisions are based. It also ensures the comparability of euro area and national statistics at international level. In the performance of its statistical function, the ESCB is committed to good governance and the highest ethical standards, as well as to executing its tasks in a spirit of cooperation and teamwork.

This report complies with the “Public commitment on European statistics by the ESCB”, which stipulates the common set of principles that govern ESCB statistics. Accordingly, it has been organised into three sections: the ESCB's institutional environment, statistical processes and statistical output. Section 1 describes the regulatory framework that applies to the data collection necessary for the production of euro area MFS; Section 2 highlights the processes governing their production and gives an overview of selected quality improvement initiatives; and Section 3 is dedicated to specific data analyses in the context of quality assessment.

The ESCB statistical function collects all relevant data in order to produce and disseminate reliable, timely, consistent and accessible statistics in the areas under the ESCB's responsibility. The main purpose of euro area MFS is to support the monetary policy of the ECB and other tasks of the Eurosystem and the ESCB. These statistics comply with European and internationally agreed standards, guidelines and good practices.

The data collection frameworks of euro area MFS cover inter alia NCBs, credit institutions, insurance corporations and pension funds, MMFs, IFs and FVCs. They provide statistics on balance sheet items of MFIs, and on insurance corporations, pension funds, FVCs and IFs. Statistics are also provided on MIR, issues of securities by euro area residents, and payments with and issuance of electronic money in the euro area.

Statistics on MFI balance sheet items are among the core statistics used by the ECB for the conduct of monetary policy. They provide crucial information on monetary developments in the euro area (e.g. monetary aggregates) and on the business of MFIs in general (e.g. outstanding loans to and deposits of households and NFCs).

⁵ Mission statement of the Eurosystem, available at: https://www.ecb.europa.eu/ecb/orga/escb/html/mission_eurosys.en.html. The Eurosystem is the central banking system of the euro area. It comprises the ECB and the NCBs of the 19 EU Member States (as of 1 January 2015) that have adopted the euro.

⁶ Protocol of the Statute of the European System of Central Banks and of the European Central Bank, available at: https://www.ecb.europa.eu/ecb/legal/pdf/c_32620121026en_protocol_4.pdf

Statistics on MIR are important for the analysis of the monetary policy transmission mechanism and pass-through of official and market interest rates to retail bank interest rates. They also provide information on the degree of integration of the retail banking markets in the euro area.

As regards the data accessibility and dissemination policy, the main indicators of monetary developments are published monthly in pre-announced press releases⁷ and regular ECB publications such as the Economic Bulletin.⁸ They are also made available with additional details in the SDW⁹ on the ECB's website. High-quality euro area MFS have been compiled and published since the start of Stage Three of Economic and Monetary Union in 1999; in 2013 and 2014, around 100 statistical press releases were issued each year in a timely and punctual manner in line with the advanced release calendar.

⁷ For further details, please see: <https://www.ecb.europa.eu/events/calendar/statscal/mfm/html/index.en.html>

⁸ Economic Bulletin, available at: <https://www.ecb.europa.eu/pub/economic-bulletin/html/index.en.html>

⁹ SDW, available at: <http://sdw.ecb.europa.eu/reports.do?node=1000003503>

1 Institutional environment

In line with their Statute, the ESCB and ECB collect MFS for carrying out their tasks, above all the conduct of monetary policy, as well as tasks related to financial stability, banking supervision and payment systems. The ECB collects data and metadata primarily from the NCBs; on occasion, data may also come from national statistical institutes, Eurostat and other (international) sources such as the Bank for International Settlements, the International Monetary Fund and the Organisation for Economic Co-operation and Development.

The institutional set-up in which statistics are produced has a significant impact on their quality. Data reporting is mainly based on ECB regulations and guidelines which support the collection of methodologically sound data in line with internationally accepted standards and classifications. ECB regulations set harmonised standards to be applied by all reporting agents, while ECB guidelines set reporting standards which are applicable only to NCBs. Guidelines add details for the data transmission to the ECB. They are typically less demanding in terms of predefined collection and compilation methods. ESCB and ECB data collections are based on highly automated systems and procedures.

The institutional environment¹⁰ therefore contributes significantly to the integrity and credibility of the production and dissemination of statistics. It relies on a well-designed regulatory framework, based on the following principles: (i) independence and accountability, (ii) mandate for data collection, (iii) impartiality and objectivity, (iv) statistical confidentiality, (v) coordination and cooperation among ESCB members and with European and international organisations, and (vi) resources and efficiency.

This section focuses on the current and forthcoming regulatory frameworks which provide the legal mandate for the collection of the data necessary for the production of euro area MFS. It contains five subsections. Subsection 1 describes the general framework that applied to most MFS production data until the end of 2014. Subsection 2 describes the adjustments made to this framework to accommodate the implementation of new statistical standards, under which statistics began to be produced in January 2015. Subsections 3 and 4 are dedicated to the new regulatory frameworks concerning respectively payments statistics in relation to the implementation of SEPA and money market statistics. Subsection 5 presents the most recent developments concerning the regulatory framework for insurance corporations and pension funds. Subsection 6 introduces the concepts being developed for the collection of new analytical granular credit and credit risk data (AnaCredit).

¹⁰ The “institutional environment” represents the first pillar of the common principles that apply to the production of ESCB statistics, as set out in the “Public commitment on European statistics by the ESCB”, available at: <http://www.ecb.europa.eu/stats/html/pcstats.en.html>. Further details can be found in the SQF and quality assurance procedures, which provide additional guidance on producing ECB statistics, available at: <https://www.ecb.europa.eu/stats/html/sqf.en.html>.

1.1 Regulatory framework applicable until 2014

The institutional environment has a direct impact on the quality of statistics. The statutory independence and accountability of the ECB, based on the provisions of the Treaty on the Functioning of the European Union,¹¹ also apply to its statistical tasks. Since the start of Stage Three of Economic and Monetary Union in 1999, several measures have been implemented to protect the integrity and credibility of euro area statistics and increase the efficiency and effectiveness of statistical procedures. In line with the “Public commitment on European statistics by the ESCB”, the ECB (in cooperation with the STC and the CMFB) developed the SQF which provides guidance on how to compile statistics and quantitative measures to assess statistical output. The framework also sets out procedures to protect statistical confidentiality, as required by Council Regulation (EC) No 951/2009.

The legal framework for collecting MFS data comes from the Treaty, i.e. Article 5 of the Statute of the European System of Central Banks and of the European Central Bank, which deals with the collection of statistical information.¹² Applying this provision, Article 2 of Council Regulation (EC) No 951/2009 amending Regulation (EC) No 2533/98 concerning the collection of statistical information by the European Central Bank¹³ defines the reference reporting population, which is of particular importance for the collection of MFS data. The regulation states that this reporting population covers: “(a) legal and natural persons residing in a Member State and falling within the sector ‘financial corporations’ as defined in ESA 95; (b) post office giro institutions residing in a Member State; (c) legal and natural persons residing in a Member State, to the extent that they hold cross-border positions or have carried out cross-border transactions; (d) legal and natural persons residing in a Member State, to the extent that they have issued securities or electronic money; (e) legal and natural persons residing in a participating Member State, to the extent that they hold financial positions vis-à-vis residents of other participating Member States or have carried out financial transactions with residents of other participating Member States.”¹⁴

The legal obligation set out in the Treaty and Regulation (EC) No 2533/98, as amended by Council Regulation (EC) No 951/2009, forms the basis for ECB Regulation ECB/2011/12 of 25 August 2011 amending Regulation (EC) No 25/2009 concerning the balance sheet of the monetary financial institutions sector (ECB/2008/32).¹⁵ It also forms the basis for ECB Regulation ECB/2009/7 of 31 March 2009 amending Regulation (EC) No 63/2002 (ECB/2001/18) concerning statistics on interest rates applied by monetary financial institutions to deposits and loans vis-à-vis

¹¹ For more information on ECB independence, accountability and corporate governance, please see: <https://www.ecb.europa.eu/ecb/orga/independence/html/index.en.html>

¹² Article 5.1 sets out that “in order to undertake the tasks of the ESCB, the ECB, assisted by the national central banks, shall collect the necessary statistical information either from the competent national authorities or directly from the economic agents”.

¹³ OJ L 269, 14.10.2009, p. 1, and OJ L 318, 27.11.1998, p. 8.

¹⁴ Paragraph 2 of Article 2 of EC Regulation No 951/2009 amending EC Regulation No 2533/98, available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0951&from=EN>

¹⁵ Regulation ECB/2008/32, available at: https://www.ecb.europa.eu/ecb/legal/date/2009/html/act_10297_amend.en.html

households and non-financial corporations¹⁶ and for Guideline ECB/2007/9¹⁷ of 1 August 2007 on monetary, financial institutions and markets statistics, which were all in force until 31 December 2014.

In addition to setting the statistical reporting requirements, the above ECB regulations, in accordance with Decision ECB/2010/10 of 19 August 2010 on non-compliance with statistical reporting requirements, also allow sanctions to be imposed on reporting agents that fail to comply with the requirements.

1.2 New regulatory framework in relation to ESA 2010 applicable from 2015

The concepts underlying the main elements of the statistical requirements for MFI balance sheet and interest rate statistics are set out in international statistical standards, namely the System of National Accounts and the European System of National and Regional Accounts (of which the 2008 SNA¹⁸ and the ESA 2010 are the latest versions). Adherence to these standards fosters international comparability of national and euro area statistics, and ensures a sound methodological background for the aggregation of data.

The existing regulatory framework was adapted in 2014 to reflect the new versions of these international statistical standards, in particular the ESA 2010. This change was required to keep the frameworks fit for policy-making purposes and to support the new presentations of the national and euro area financial accounts and b.o.p. statistics, for which the MFS represent an important source of information.

In particular, new regulations have been adopted in the area of MFI balance sheet and interest rate statistics and statistics on the assets and liabilities of IFs and FVCs. The changes reflect the revised international statistical standards as well as other user requirements.

Considering the substantial amendments made to the regulatory framework in recent years, the existing Regulations ECB/2008/32¹⁹, ECB/2007/8, ECB/2008/30, ECB/2006/8 and ECB/2001/18, and Guideline ECB/2007/9 were recast in the interests of clarity by, respectively, Regulation ECB/2013/33 of 24 September 2013 concerning the balance sheet of the monetary financial institutions sector,²⁰ Regulation ECB/2013/38 of 18 October 2013 concerning statistics on the assets and liabilities of investment funds,²¹ Regulation ECB/2013/40 of 18 October 2013

¹⁶ Regulation ECB/2009/7, available at: https://www.ecb.europa.eu/ecb/legal/date/2009/html/act_10420_amend.en.html

¹⁷ Guideline ECB/2007/9, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_9716_amend.en.html

¹⁸ SNA 2008, available at: <http://unstats.un.org/unsd/nationalaccount/sna2008.asp>

¹⁹ As amended by Regulation ECB 2011/12.

²⁰ Regulation ECB/2013/33, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_12951_amend.en.html

²¹ Regulation ECB 2013/38, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_12955_amend.en.html

concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions,²² Regulation ECB/2013/39 of 18 October 2013 on statistical reporting requirements for post office giro institutions that receive deposits from non-monetary financial institution euro area residents,²³ Regulation ECB/2013/34 of 24 September 2013 concerning statistics on interest rates applied by monetary financial institutions²⁴ and Guideline ECB/2014/15²⁵ of 4 April 2014 on monetary and financial statistics.

To allow reporting agents and NCBs sufficient preparation time, reporting under these new legal acts began in January 2015 with a reference data period of December 2014. The new statistics are scheduled to be published in the course of 2015 when annual growth rates for MFI balance sheet items can be produced for the new breakdowns. To bridge this gap, estimations will be made for the compilation of national accounts and b.o.p. statistics. Detailed information on these changes will be made available at a later stage. To ensure comparability with data reported in accordance with previous methodologies, several time series will also be revised backwards.

As regards the delineation of counterparty sectors, the new regulations now include holding companies controlling and directing non-financial groups together with OFIs. Until the end of 2014, these were grouped together with NFCs.

As regards statistics on balance sheet items of MFIs, IFs, FVCs and POGIs, the new data requirements also provide for more granular breakdowns, particularly in terms of counterparty sectors and instrument categories. For example, IFs, insurance corporations and pension funds are now identified separately among counterparty sectors. An additional breakdown by original maturity appears under loans and holdings of government debt securities. Furthermore, several residual items on the MFI balance sheet are reported as a lump sum in the form of “remaining assets” or “remaining liabilities”. However, individual values for financial derivatives and accrued interest will now also be received.

As regards MIR statistics,²⁶ Regulation ECB/2013/34 introduces a new indicator comprising only renegotiated loans so that they can be distinguished from new loans granted to the private sector. This allows the calculation of gross new loans, which may serve as an early indicator of the development of credit in the economy. Other improvements made to the MIR dataset are related to more detailed breakdowns by

²² Regulation ECB 2013/40, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_12982_amend.en.html

²³ Regulation ECB 2013/39, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_12980_amend.en.html

²⁴ Regulation ECB 2013/34, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_12954_amend.en.html

²⁵ Guideline ECB 2014/15, available at: https://www.ecb.europa.eu/ecb/legal/1005/1021/html/act_13126_amend.en.html

²⁶ The MIR dataset focuses on interest rates applied to deposits and loans vis-à-vis households and NFCs (i.e. the non-financial sector other than government). Unlike balance sheet item statistics, most interest rate indicators refer to new business. This is a modified concept of gross flows, as it comprises not only new loan and deposit contracts but also renegotiations of existing agreements.

remaining maturity and next interest rate reset period for interest rates on outstanding amounts.

In addition to new interest rate indicators, the methodology underlying the calculation of national aggregated interest rates has also been reviewed. Guideline ECB/2014/15 introduces a new formula for the derivation of grossed-up figures which improves the accuracy of results based on data collected by sampling.

The 2003 Manual on MFI interest rate statistics²⁷ contains practical and useful information related to MIR statistics, including definitions and methods, and the coverage and treatment of special products. An updated version is scheduled for publication in the course of 2015. It will cover all new indicators and breakdowns brought in by Regulations ECB/2009/7 and ECB/2013/34. The 2012 Manual on MFI balance sheet statistics²⁸ will also be updated in the course of 2015 to cover the changes brought in by Regulation ECB/2013/34 and Guideline ECB/2014/15.

It is worth noting that several other initiatives concerning MFS are ongoing and may result in new amendments to the existing regulations. In particular, a new Regulation on payments statistics was adopted at the end of 2013 and new statistics on insurance corporations are currently being prepared (see the following subsections). Securities issues statistics have also been reviewed to align the breakdowns by sectors and instruments with the new standards.

1.3 The new payments statistics regulatory framework and SEPA

The ESCB provides yearly payments statistics starting with reference year 2007. Up to the reference year 2013, these statistics were collected on the basis of the reporting framework set out in the ECB Guideline on monetary, financial institutions and markets statistics (ECB/2007/9). The compilation has to date relied on the assumption that most payments to and from residents of one country are carried out by the payment service providers resident in the same country. However, this assumption is increasingly no longer valid in light of the progressive implementation of SEPA²⁹ and other developments in the payments market in Europe. Cross-border payments within SEPA can now be carried out under the same conditions as domestic payments. Consequently, within SEPA, residents can now initiate euro payments through a service provider resident in another SEPA country without incurring additional fees and corporations can advantageously execute all their cross-border euro payments via a single institution. These developments have a significant impact on payments statistics, both in terms of the methodology applied and new indicators required.

²⁷ MIR Manual, available at: <https://www.ecb.europa.eu/pub/pdf/other/mfiintrestatisticsmanualen.pdf>

²⁸ Manual on MFI balance sheet statistics, available at: <http://www.ecb.europa.eu/pub/pdf/other/manualmfbalancesheetstatistics201204en.pdf>

²⁹ SEPA migration key facts, available at: <https://www.ecb.europa.eu/paym/retpaym/paymint/migration/html/index.en.html>

Accordingly, new legal obligations have been set out in Regulation ECB/2013/43 of 28 November 2013 on payments statistics³⁰ establishing new reporting requirements. The Regulation entered into force in January 2014 and statistics will be collected and published in autumn 2015 starting with the reference period July 2014.³¹ The legal obligation set out in the Treaty and Council Regulation (EC) No 2533/98, as amended by Council Regulation (EC) No 951/2009, forms the basis for this new Regulation.

Unlike current statistics, the new regulation allows payment transactions involving domestic counterparties to be distinguished from those involving counterparties resident outside the reporting country. For all main categories of sent payment transactions, a further breakdown by counterparty country is also required when the counterparty belongs to the EU. Information is also requested on cross-border transactions received.

In addition, more information will now be collected on the number of payment service providers, the number of payment accounts and the number of electronic money accounts held by these institutions. Several new requirements have also been introduced to take into account the increase in the volume and value of electronic money transactions.

1.4 New regulation on money market statistics

The ECB issued a new Regulation on 26 November 2014 concerning statistics on the money markets (ECB/2014/48)³². It entered into force on 1 January 2015. The ECB will start collecting daily transactional data from 1 April 2016 on euro money market instruments in relation to four money market segments: secured, unsecured, foreign exchange swaps and euro overnight index swaps.

These new statistics on euro money market transactions are required in order to obtain relevant and timely information on the transmission mechanism of monetary policy. The publication of aggregated data will also provide market participants with additional understanding of market developments and patterns, thereby facilitating their decision-making.

In the first wave, the reporting population will consist of approximately the 50 largest credit institutions in the euro area, i.e. those whose total main balance sheet assets are greater than 0.35% of the total main balance sheet assets of all euro area MFIs. Data must be transmitted once per day before 7 a.m. CET on the first TARGET2 settlement day after the trade date. On 1 January 2017 a second wave involving other MFIS may be launched.

³⁰ Regulation ECB 2013/43, available at: https://www.ecb.europa.eu/ecb/legal/pdf/en_regulation_ecb_2013_43_f_sign.pdf

³¹ With a view to enhancing data comparability, historical information for the reference period 2013 is required on a best efforts basis.

³² ECB Regulation 2014/48, available at: https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2014_359_r_0006_en_txt.pdf

1.5 Enhanced statistics on insurance corporations and pension funds

In 2014 the ECB continued to regularly publish quarterly euro area balance sheet statistics on insurance corporations and pension funds. These are published with a time lag of around three months after the end of the reference period (they were first published in 2011, starting from reference period first quarter of 2008).

Insurance corporation and pension fund statistics are currently compiled under a “short-term” approach, exploiting balance sheet data available at the national level on a best efforts basis and without imposing new data requirements on the reporting agents. It follows that the data underlying the euro area aggregates are not harmonised and estimations are often necessary.

Although these data have allowed many users to enhance their analysis and thus contributed over time to numerous briefings and publications at the ECB, further improvements are required to fulfil user needs regarding quality, coverage, breakdowns and data type. The ECB/ESCB is therefore working towards a “steady-state” approach to meet user needs with harmonised statistics based on ECB regulations.

It should be noted that according to Council Regulation (EC) No 2533/98 (as amended by Council Regulation (EC) No 951/2009), insurance corporations and pension funds resident in the euro area are included in the reporting population on which the ECB could impose statistical reporting obligations.

Insurance corporations

After the performance of a merits and costs procedure, a new ECB Regulation (ECB/2014/50)³³ on statistical reporting requirements for insurance corporations was adopted by the Governing Council on 28 November 2014. This new Regulation is in line with the work of EIOPA³⁴ carried out in the context of the Solvency II Directive,³⁵ including the related reporting templates.

The new Regulation remedies the shortcomings of unharmonised and incomplete statistics on insurance corporations, in particular the limited dissemination of transaction data due to insufficient data quality. By filling a major gap in the ESCB’s statistical data, the new statistics will better support monetary and financial analyses carried out in the ESCB, thereby contributing to the stability of the financial system. The Regulation addresses new reporting requirements for all insurance corporations resident in the euro area. It sets out the harmonised collection of data for

³³ Regulation ECB/2014/50, available at: https://www.ecb.europa.eu/ecb/legal/pdf/en_reg_2014_50_sign.pdf

³⁴ See the EIOPA website: <https://eiopa.europa.eu/>

³⁵ Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:335:0001:0155:en:PDF>

breakdowns of insurance corporations' assets and liabilities by geographical location of counterparty, sector and maturity. Stocks and transaction data will be produced on a quarterly basis.

With a view to minimising the reporting burden on insurance undertakings, most requirements of the ECB Regulation are aligned with the requirements for supervisory purposes under the Solvency II Directive. Furthermore, the ECB Regulation explicitly allows NCBs to fulfil the statistical requirements, as far as possible, using the data collected for supervisory purposes. In this context, close cooperation with EIOPA (and its forerunner CEIOPS), as well as the insurance industry, has helped shape the definitions, content, frequency and timeliness requirements in the new Regulation.

The statistical reporting to the ECB will at first cover only solo balance sheet requirements (including security-by-security reporting). The collection of data according to the new Regulation will start in 2016 and it is foreseen that the Regulation will be updated after 2016 in order to cover additional user requirements such as balance sheet information on insurance groups, statistics on capital adequacy ratios and elements of profit and loss information.

Pension funds

To allow further cooperation to be pursued with EIOPA in the domain of pension funds, the work towards a steady-state approach had to be postponed in 2014. In the meantime, the reporting requirements for pension funds will continue to follow the short-term approach. To enhance the short-term approach in the best interests of pension fund data users, new statistical requirements were included in the ECB Guideline of 4 April 2014 on MFS (ECB/2014/15). The new reporting scheme for pension funds defined in Guideline ECB/2014/15 will allow additional information to be collected in line with the new ESA 2010 requirements. The collection of these new pension fund data will start in January 2016 in full synchronisation with the collection of insurance corporation data according to Regulation ECB/2014/50. In this context, it is worth noting that all euro area countries, as well several non-euro area countries, already report pension fund data to the ECB on a voluntary basis even though ECB guidelines and regulations are not binding for non-euro area countries.

Regulation ECB/2014/50 addresses only euro area insurance corporations. In 2015 the ECB will launch a new merits and costs procedure, which entails a separate consultation on user requirements, in preparation for a new regulation on statistical reporting requirements that will specifically address pension funds.

Harmonised supervisory reporting templates for pension funds should also be developed on the basis of the planned new directive on institutions for occupational retirement provisions (IORPs).³⁶ However, no exact timetable has yet been agreed

³⁶ Information on the ongoing work on the IORP II directive, available at: <http://www.pensionseurope.eu/iorp-directive>

upon owing to uncertainties and difficulties in reaching a consensus on the level of reporting detail, frequency and timeliness.

1.6 New concepts for analytical granular credit and credit risk data (AnaCredit)

The recent financial crisis has revealed that although a wide range of data is already available, more granular, frequent and flexible credit and credit risk data are crucial within the ESCB for monetary policy analysis and operations, financial stability, banking supervision and research purposes, as well as for the development, production and enhanced quality of ESCB statistics. The ECB therefore adopted Decision ECB/2014/6 of 24 February 2014 on the organisation of preparatory measures for the collection of granular credit data by the European System of Central Banks.³⁷ Consequently, a project on analytical credit datasets (AnaCredit) was launched within the ESCB in 2014.

The Decision provides a concrete timescale for the long-term framework which will entail the creation of national granular credit databases, based on harmonised reporting requirements, and a shared ESCB database. It also caters for an assessment of the complexity of the data as well as the data quality assurance and data sharing procedures to be applied in the “steady state”. All these aspects are included in a list of preparatory measures to be implemented by the STC until the long-term framework is fully operational.

The preparatory measures also cover the arrangement of early annual data transmissions of readily available granular credit data from the NCBs to the ECB. The purpose of this is to advance the establishment of a harmonised granular credit data framework in line with the identified user needs. The information to be transmitted includes credit exposures of financial institutions in countries where the NCBs already operate a granular credit database, even though there is not yet any harmonisation in terms of the definition of concepts, population (lenders and borrowers) and instruments collected (loans, derivatives and off-balance sheet exposures).

The envisaged long-term framework of AnaCredit should lead to the harmonisation of both the scope and type of information to be collected on the transactions in accordance with the existing frameworks in statistics (ESA 2010, BSI and MIR), supervision (CRD IV)³⁸ and accounting (IFRS)³⁹. The envisaged information is expected to cover deposits (assets of reporting institutions), loans, derivatives and off-balance sheet exposures. The reporting population will initially comprise deposit-taking corporations, including foreign branches and subsidiaries, while all possible counterparties will be in the system from inception. The first reference date is expected to be December 2017.

³⁷ Decision ECB 2014/6, available at: https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2014_104_r_0008_en_txt.pdf

³⁸ Capital requirements regulation and directive – CRR/CRD IV, available at: http://ec.europa.eu/finance/bank/regcapital/legislation-in-force/index_en.htm

³⁹ IFRS, available at: <http://www.ifrs.org/Pages/default.aspx>

2 Statistical processes

The processes used for the development, collection, processing and dissemination of statistics constitute the core of all statistical systems.⁴⁰ The main principles consist in ensuring methodological soundness, appropriate statistical procedures, cost-effectiveness and the minimisation of the reporting burden.

There was good quality management for the statistical processes used for collecting, processing and disseminating the MFS statistics in 2013 and 2014. This section presents the main accomplishments in enhancing MFS statistical processes since the last euro area quality report issued in 2013, namely for BSI, FVCs, MIR, RIAD and the SHSDB.

2.1 National practices for compiling MFI balance sheet data

The ECB, together with the NCBs, launched a survey in late 2013 to gather information on national practices for compiling balance sheet statistics for MFIs, under Regulation ECB/2008/32. Although ECB regulations and guidelines are legally binding instruments for the reporting of relevant statistics in the euro area, some aspects are left to national discretion and others are subject to interpretation.

The idea behind the survey is threefold. The first objective is to enhance the transparency of MFI balance sheet statistics across euro area countries by revealing the extent of harmonisation and highlighting sources of divergence. The second objective is to enable statisticians in euro area NCBs to document existing practices. The third objective is to provide countries with a benchmark against which to assess their national practices.

The exercise allows users of euro area MFI balance sheet statistics to better interpret the statistics as they can gain a clearer picture of the way in which national data are compiled in individual countries. An improved understanding of the national data collection process by ESCB statisticians also serves to increase the overall quality of ESCB statistical output. Finally, by providing each NCB with a comprehensive overview of the prevailing reporting and compilation approaches within the ESCB, it makes it possible to compare all national approaches and allows countries to better decide when to review their own methods.

A report describing the results of the survey is scheduled for publication in the course of 2015.

⁴⁰ “Statistical processes” represents the second pillar of the common principles that apply to the production of ESCB statistics as set out in the “Public commitment on European statistics by the ESCB”: <http://www.ecb.europa.eu/stats/html/pcstats.en.html>. Further details can be found in the SQF and the quality assurance procedures, which provide additional guidance on producing ECB statistics: <https://www.ecb.europa.eu/stats/html/sqf.en.html>.

2.2 Improving statistical information on FVCs

In order to facilitate the increasing use of security-by-security data across ESCB statistical datasets, the ISIN identifiers⁴¹ of debt securities issued by FVCs, which are collected as part of the list of FVCs maintained by the ECB, have been used since the end of 2013 to identify FVC issuers within the CSDB.⁴² This enables ESCB statisticians to compile positions vis-à-vis FVCs specifically, rather than within the wider ESA 2010 subsector of OFIs only. Inconsistencies between the ESA 2010 subsector on the CSDB and FVCs status are highlighted for quality checking. This not only helps to ensure that the securities reported on the FVC list are correct, but also contributes to the quality of information in the CSDB with respect to the issuing sector of these securities.

Following the implementation of the ESA 2010, FVCs now make up the largest share of the OFI sector, and so this improvement provides further granularity on the interconnections between FVCs and other sectors, which is useful for a number of reasons, not least for the analysis of shadow banking.

2.3 MIR audit

The ESCB Internal Auditors Committee (IAC) conducted an audit on MIR statistics during the first half of 2014. The objective of the audit was to provide reasonable assurance about the adequacy and effectiveness of the risk management, control and governance processes related to the production of MIR statistics in the Eurosystem/ESCB.

The audit focused on the processes related to the selection of the reporting population for MIR statistics at each NCB, as well as the collection, aggregation and dissemination of MIR statistics at both NCB and ECB level. Particular attention was given to the data quality controls applied, the protection of the information in terms of confidentiality and integrity, and the logging and reporting of non-compliance cases involving reporting agents by NCBs to the ECB. Furthermore, a subset of general IT controls, including systems, applications and end-user computing, was audited, as they relate to the IT systems supporting MIR statistics processes hosted at both the NCBs and the ECB. Generic ESCB IT components were beyond the scope of the audit.

The IAC reported that the performance of the audit was not hindered by any limitations of scope and provided the overall opinion that “the risk management, controls and governance processes related to the production of the MIR statistics are sufficiently effective”. A number of recommendations were made, mainly concerning

⁴¹ The ISIN uniquely identifies a security. ISO 6166 defines the detailed structure of an ISIN.

⁴² The objective of the CSDB is to cover all securities relevant for the statistical purposes of the ESCB. Information on the CSDB is available at:
<https://www.ecb.europa.eu/pub/pdf/other/centralisedsecuritiesdatabase201002en.pdf>.

the extension of quality controls and dissemination, and should be implemented by 2016.

2.4 Register of financial institutions and affiliates

Since its introduction alongside the euro in 1999, the RIAD system has been providing an updated and complete view of the population of MFIs operating in the EU, with publication on a daily basis. The latest version of the system was launched in May 2013. It provides a new, fully-automated and streamlined data flow. The daily contributions acquired in batches from all EU NCBs are now automatically bundled, and no manual or special quality-management steps are required to produce the regular output.

To ensure sound methodology, the data model used for the RIAD now follows the Eurostat Business registers Recommendations manual. The RIAD has thus been transformed from a tool that collects and publishes simple lists of financial institutions into a genuine “business register” based on the general principles defined for (statistical) registers. The system is now capable of recording and providing reference data in line with the methodological standards for describing statistically relevant units (such as legal units, institutional units, enterprises and enterprise groups).

Data acquisition has also been streamlined with the recent upgrade in 2013 and the introduction of a new data exchange mechanism that requires only the changes to the existing attributes to be communicated, rather than the full data records. Moreover, data input can now also be provided directly via an online connection.

The recent upgrade aims to improve usability for all stakeholders, not just for statisticians. The cost-benefit review of the latest improvement project stressed Market Operation functions’ need to be able to identify and monitor “close links” between specific organisational units relevant to monetary policy. As in many cases, statistics and banking supervision have needs for similar reference data on single unit and/or group structures; it was therefore decided that this feature should be implemented in the RIAD. This decision obviates the need to develop an entirely new and distinct IT system and confirms the appropriateness of the cost-saving approach for developing new features within a multi-purpose application.

2.5 New concepts for securities holdings statistics

In 2014 the ESCB started collecting SHS under Regulation ECB/2012/24⁴³ and Guideline ECB/2013/7⁴⁴. These statistics provide quarterly information on securities

⁴³ Regulation ECB/2012/24, available at: https://www.ecb.europa.eu/ecb/legal/pdf/l_30520121101en00060024.pdf

⁴⁴ Guideline ECB/2013/7, available at: https://www.ecb.europa.eu/ecb/legal/pdf/l_12520130507en00170033.pdf

holdings by euro area sectors and by selected reporting banking groups in the euro area, as well as information on holdings of euro area securities by non-euro area investor countries. Since they are collected on a security-by-security basis, the data by sector of the SHS offer a wide range of breakdowns on the issuer and holder sides which are not available from other statistics. Thus, this new dataset, which is available as of the fourth quarter of 2013, facilitates a more detailed analysis of a range of monetary statistics including MFI balance sheet, IF, and FVC statistics.

In particular, the SHS provide information on aggregated positions in shares and debt securities (held or issued) with more detail on the maturity breakdown, or, in case of securities issued, with a more detailed picture of the holdings of these securities by investors in the euro area. As the dataset has only recently been made available, comparisons between aggregated monetary statistics and SHS data are ongoing.

3 High output quality

The monitoring of the quality of the statistical data produced is a key controlling activity to ensure that statistical data requirements are met.⁴⁵ “High output quality” encompasses the following five principles: relevance, accuracy and reliability (including stability), timeliness (including punctuality), consistency and comparability, and accessibility and clarity.

The ECB’s internal compilation procedures include a wide range of quality checks on the national contributions received and on the euro area aggregates compiled, with the aim of detecting potential problems in national data which may have a negative effect on the quality of the output statistics. These quality checks can be grouped into four main categories: (i) completeness⁴⁶, internal consistency and intra-period consistency⁴⁷; (ii) plausibility checks; (iii) external consistency⁴⁸; and (iv) revision studies to monitor the magnitude of data revisions, particularly for monetary aggregates and monetary interest rates.

The quality checks on the production of MFS have not been modified since the last quality report.⁴⁹ Overall, the quality of the data published has remained very high and fit for policy needs in 2013 and 2014. This section focuses on presenting the results of the quantitative checks performed, in order to analyse the magnitude of the data revisions affecting the compilation of monetary aggregates and monetary interest rates.

3.1 Quality measures based on revisions to MFI balance sheet and interest rate statistics

The analysis of revisions in this section evaluates the reliability of first releases. This is an important quality feature alongside compliance with harmonised definitions, the timely incorporation of methodological changes and consistency with other statistics. However, it should be noted that a limited number of revisions to first estimates is not

⁴⁵ “High output quality” represents the third and final pillar of the common principles that apply to the production of ESCB statistics, as set out in the “Public commitment on European statistics by the ESCB”: <http://www.ecb.europa.eu/stats/html/pcstats.en.html>. Further details can be found in the SQF and the quality assurance procedures, which provide additional guidance on producing ECB statistics: <https://www.ecb.europa.eu/stats/html/sqf.en.html>.

⁴⁶ Completeness check: the detection of missing series.

⁴⁷ Internal consistency: all linear constraints are correctly applied in the data received, i.e. the balance sheet balances and the totals and subtotals add up; intra-period consistency, i.e. that the sum of the monthly transaction values is equal to the quarterly value and year-end stocks are equal to the stocks for the end of December.

⁴⁸ For example, the balance sheet statistics received by the ECB on the cross-border positions of euro area banks are compared with similar data collected by the Bank for International Settlements.

⁴⁹ See Annex 1 of previous quality report of euro area MFS for a summary of the checks performed per statistical product, available at: <http://www.ecb.europa.eu/pub/pdf/other/euroareamonetaryandfinancialstatistics201306en.pdf>

necessarily an indicator of accurate measurement; revisions are primarily intended to improve statistics.

The revision practice for MFI balance sheet and MIR statistics allows data to be revised at any release in order to keep the statistics up to date and relevant. The only restriction is that revisions to monthly BSI data have to be submitted by the NCBs at the same time as the quarterly MFI balance sheet statistics are submitted, in order to ensure consistency between monthly and quarterly statistics. BSI data collected quarterly provide a more detailed breakdown and can thus, in principle, lead to the detection of errors in the monthly BSI data and to corresponding revisions.

A distinction is made between “ordinary” and “exceptional” revisions. Data are generally considered “provisional” at first release; revisions can therefore be expected in the next monthly update at t+1. Exceptional revisions that are a result of reclassifications and improved reporting procedures, for example, can be made at any release and can go back as far as 2003 depending on the indicators.

3.1.1 Analysis of revisions to euro area MFI balance sheet statistics

In the following analysis, the vintages in the ECB’s SDW covering data for the reference periods June 2005 to August 2014 have been used to analyse how the monthly revisions received between August 2005 and October 2014 at t+1, t+3, t+6 and t+12 months have cumulatively affected the monetary aggregates and their components after their initial publication in press releases.⁵⁰

This analysis of revisions is an update of that presented in the 2012 Data Quality Report, as it extends the data range by 24 months. Although the approach to presenting the data has been enhanced slightly since 2012, the underlying methodology remains the same.

3.1.1.1 Revisions to euro area monetary aggregates

In general, the cumulative impact of the revisions on all published monetary aggregates, including the broad aggregate M3, is still very small and is barely visible in the monthly growth rates of the monetary aggregates. Moreover, the impact of the revisions received between November 2012 and October 2014 was smaller for all monetary aggregates than over the period between August 2005 and October 2014.

As published growth rates are given to one decimal point, changes lower than 0.05 p.p. have practically no effect on the published figures. Thus, 59% of all M3 month-on-month growth rates remained practically unchanged by all revisions received since August 2005, as their cumulative impact at t+12 was lower than 0.05 p.p. in

⁵⁰ The cut-off date for performing the analysis was the end of October 2014. The most recent data available for analysis are therefore from the reference period September 2014 (data are received with a one month time lag). As revisions may at best apply to data from the previous month, the most recent reference period available for this analysis is August 2014.

absolute terms (see Table 1). In the same period, 87% and 96% of the initially published growth rates saw changes a posteriori below 0.10 p.p. and 0.20 p.p. respectively.

Interestingly, there were substantially fewer revisions for the period between November 2012 and October 2014, as 67%, 88% and 100% of the initially published M3 growth rates were affected by changes below 0.05, 0.10 and 0.20 p.p. respectively (see Table 1).

Using the same 0.05 p.p. metric, at time lag t+1, the figure of unchanged M3 growth rates is 73% for revisions received since August 2005 (92% since August 2012). At time lag t+3, the figure of unchanged growth rates is 61% for revisions received since August 2005 (83% since June 2012). At time lag t+6, the figure of unchanged growth rates is 58% for revisions received since August 2005 (75% since March 2012).

With regard to revisions received since August 2005, the bias (simple average) vis-à-vis the early estimates for the month-on-month M3 growth rates varies between -0.005 at time lag t+1 and -0.009 p.p. at t+12 (see Table 1), which are negligible values.

The root mean square (RMS)⁵¹ of the total impact on the M3 growth rate varies between 0.064 p.p. at time lag t+1 and 0.078 p.p. at time lag t+12. This is also small, as an RMS impact of 0.078 p.p. represents 15.4% of the RMS differences observed between monthly growth rates during the same period (i.e. with reference periods from June 2005 to September 2013).⁵²

It is worth noting that the cumulative impact of the revisions received since November 2012 generally had a smaller effect on the M3 growth rate than in previous years; the RMS impact at t+12 is 0.057 p.p. versus 0.078 p.p. for all revisions received since August 2005. This lower number is not directly related to the M3 growth rates being smaller in the last four years, as the RMS of the differences between the monthly M3 growth rates has remained stable overall: for revisions received since November 2012, the RMS of differences is 0.453 p.p. versus 0.508 p.p. for revisions received since August 2005 (on the t+12 corresponding ranges). This improvement is apparent in the RMS impact of cumulative revisions (up to t+12) received since November 2012 when compared with the RMS differences observed between growth rates during the corresponding reference period (from October 2011 to September 2013), resulting in a ratio of 12.6%. This ratio of 12.6% is to be compared with the 15.4% ratio above. Both figures are too small to hinder a proper analysis and interpretation of the monthly variations seen in month-on-month M3 growth rates.

⁵¹ The RMS formula is appropriate for measuring the total impact. The figures generated with this formula, however, are in practice very close to those generated using the standard deviation formula, because the average here is very small and the population sufficiently numerous.

$$\text{RMS} = \sqrt{\sum X_i^2 / N} = \sqrt{\bar{X}^2 + ((N-1)/N) * \delta^2}$$
, with the average $\bar{X} = \sqrt{\sum X_i / N}$ and standard deviation $\delta = \sqrt{\sum (X_i - \bar{X}) / (N-1)}$.

⁵² Regarding the time range that corresponds to the t+12 time lag (wherein the impact of all revisions up to the time lag t+12 can be analysed), the RMS of the differences between the monthly M3 growth rates was 0.508 p.p., which is 6.5 times the RMS impact of cumulative revisions.

Table 1**Impact of cumulative revisions on initially released M3 growth rates**

(hundredth of percentage points)

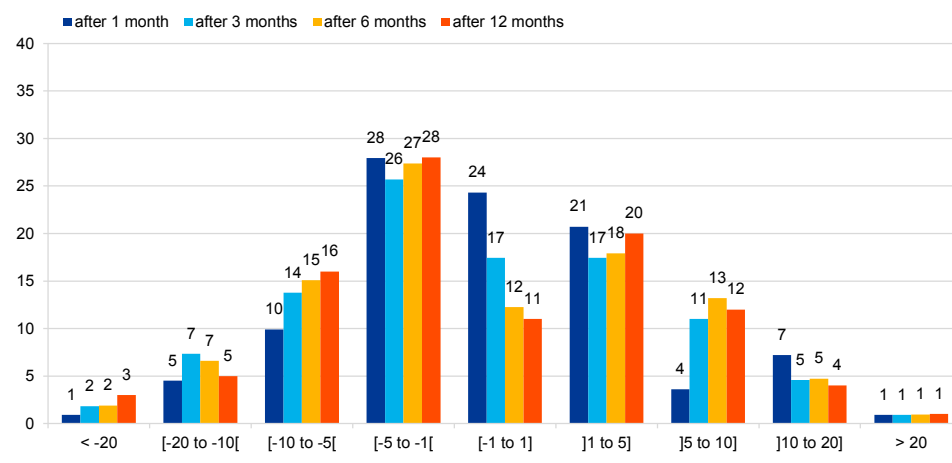
Time lag (months)	T+1	T+3	T+6	T+12
Monthly revisions received from August 2005 to October 2014				
Number of months	111.00	109.00	106.00	100.00
Average impact	-0.48	-1.02	-0.92	-0.92
Standard deviation (n-1)	6.44	7.62	7.89	7.79
RMS impact	6.43	7.66	7.91	7.81
Maximum impact	24.94	25.56	25.01	24.20
Minimum impact	-22.80	-31.18	-30.57	-30.39
Impacts <= 0.01 p.p.	24.3%	17.4%	12.3%	11.0%
 Impacts <= 0.05 p.p.	73.0%	60.6%	57.5%	59.0%
Impacts <= 0.10 p.p.	86.5%	85.3%	85.8%	87.0%
Impacts <= 0.20 p.p.	98.2%	97.2%	97.2%	96.0%
Monthly revisions received from November 2012 to October 2014				
Number of months	24.00	24.00	24.00	24.00
Average impact	-1.00	-0.88	-0.61	-1.11
Standard deviation (n-1)	3.06	4.02	3.86	5.74
RMS impact	3.16	4.03	3.82	5.72
Maximum impact	3.10	5.35	6.35	11.09
Minimum impact	-8.80	-13.06	-7.76	-12.02
Impacts <= 0.01 p.p.	37.5%	29.2%	29.2%	16.7%
 Impacts <= 0.05 p.p.	91.7%	83.3%	75.0%	66.7%
Impacts <= 0.10 p.p.	100.0%	95.8%	100.0%	87.5%
Impacts <= 0.20 p.p.	100.0%	100.0%	100.0%	100.0%

One would expect that with time, initial revisions would take place early, mostly within the first three months following the initial release, and that no further significant revisions would then be received in the subsequent periods. This is verified in practice, as depicted in the following two charts (see Figures 1 and 2). This holds more exactly for the revisions received since November 2012 (see Figure 2), which show an improvement compared with the situation when all revisions since August 2005 are considered.

Figure 1

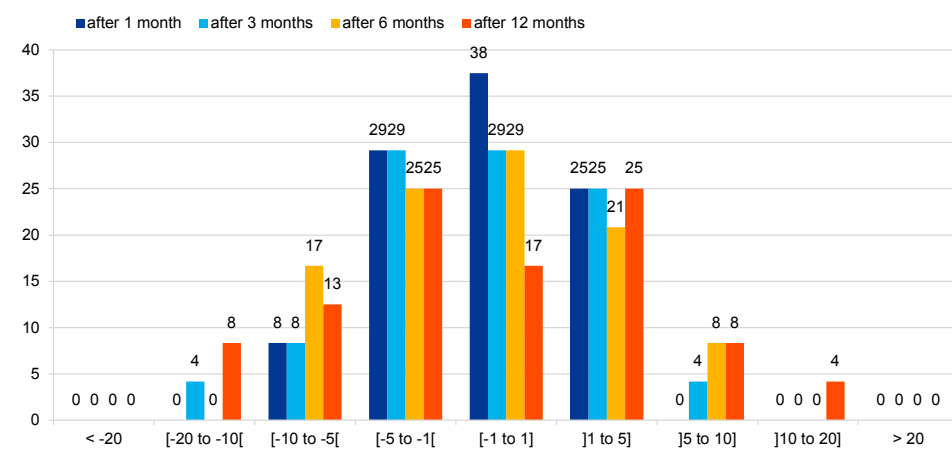
Impact of cumulative revisions received monthly from August 2005 to October 2014 on the initially released M3 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)

**Figure 2**

Impact of cumulative revisions received monthly from November 2012 to October 2014 on the initially released M3 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)



As shown hereafter, similar conclusions can be drawn with regard to the M1 and M2 growth rates: while the M1 growth rates overall show behaviour similar to that of the M3 growth rates, M2 growth rates are less affected by revisions than M3 growth rates.

Regarding the month-on-month M2 growth rate, the RMS impact of cumulative revisions received since August 2005 varies between 0.047 p.p. at time lag $t+1$ and 0.057 p.p. at time lag $t+12$ (see Table 2). These figures are smaller (i.e. better) than the RMS impact measured on the M3 growth rate. Regarding revisions received since November 2012, the RMS impact at $t+1$ is 0.037 p.p. and at $t+12$ is 0.032 p.p.,

which is even smaller. All in all, the impact of revisions on the month-on-month M2 growth rates has been marginal.

Table 2
Impact of cumulative revisions on initially released M2 growth rates

(hundredth of percentage points)

Time lag (months)	T+1	T+3	T+6	T+12
Monthly revisions received from August 2005 to October 2014				
Number of months	111.00	109.00	106.00	100.00
Average impact	0.41	0.43	0.25	0.49
Standard deviation (n-1)	4.73	5.24	5.66	5.72
RMS impact	4.72	5.23	5.64	5.71
Maximum impact	17.82	21.58	21.13	20.38
Minimum impact	-20.90	-22.43	-22.11	-18.25
Impacts <= 0.01 p.p.	45.0%	30.3%	22.6%	19.0%
 Impacts <= 0.05 p.p.	87.4%	81.7%	74.5%	73.0%
Impacts <= 0.10 p.p.	91.9%	93.6%	92.5%	90.0%
Impacts <= 0.20 p.p.	99.1%	98.2%	98.1%	99.0%
Monthly revisions received from November 2012 to October 2014				
Number of months	24.00	24.00	24.00	24.00
Average impact	0.39	0.39	0.94	1.14
Standard deviation (n-1)	3.76	3.49	3.63	3.08
RMS impact	3.70	3.44	3.68	3.22
Maximum impact	10.97	9.96	9.45	9.29
Minimum impact	-8.30	-6.42	-6.52	-3.16
Impacts <= 0.01 p.p.	45.8%	41.7%	33.3%	33.3%
 Impacts <= 0.05 p.p.	87.5%	87.5%	87.5%	91.7%
Impacts <= 0.10 p.p.	95.8%	100.0%	100.0%	100.0%
Impacts <= 0.20 p.p.	100.0%	100.0%	100.0%	100.0%

As shown in Figure 3, there are usually no further significant revisions affecting the M2 growth rates three months after the initial release. This is even more evident when looking at the cumulative revisions received since November 2012, as the impact at t+6 is not significantly different from the impact at t+3 (see Figure 4). The impact at t+12 is very similar to the impact at t+6.

Figure 3

Impact of cumulative revisions received monthly from August 2005 to October 2014 on the initially released M2 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)

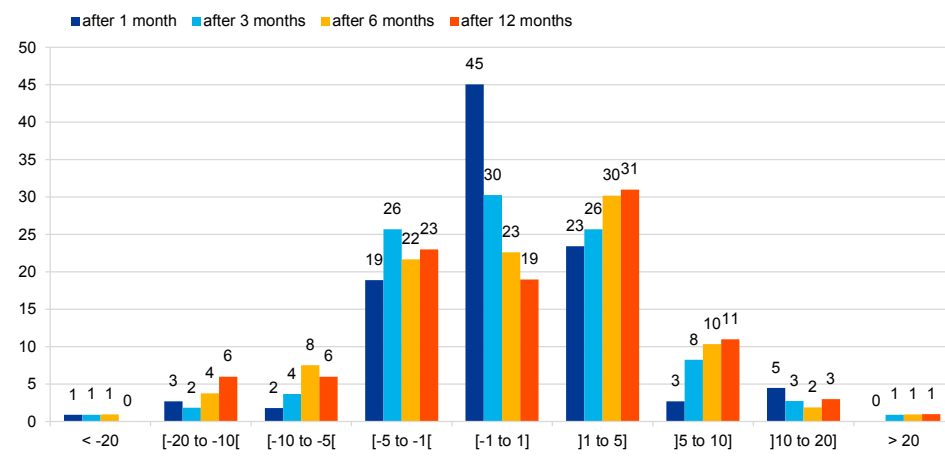


Figure 4

Impact of cumulative revisions received monthly from November 2012 to October 2014 on the initially released M2 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)

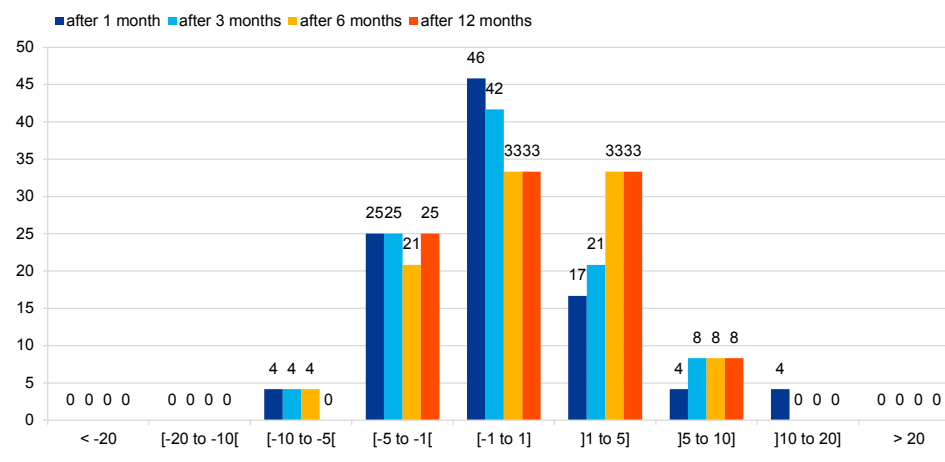


Table 3 summarises the cumulative impact of revisions on the month-on-month M1 growth rate. The revisions received since August 2005 with a time lag of t+12 that had an impact on the growth rate in excess of 0.10 p.p. in absolute terms affected the M1 growth rate more than they did to the M2 or M3 growth rates. The figures are 18%, 10% and 13% respectively for M1, M2 and M3 growth rates. The situation improves when only the revisions received since November 2012 are considered: the figures are then 0%, 0% and 13% respectively for M1, M2 and M3 growth rates.

There has been a significant improvement with regard to the RMS impact, which is 0.095 p.p. when taking into account all cumulative revisions up to t+12 since August

2005, but drops to 0.040 p.p. when the same observation is made for revisions received since November 2012.

Table 3
Impact of cumulative revisions on initially released M1 growth rates

(hundredth of percentage points)

Time lag (months)	T+1	T+3	T+6	T+12
Monthly revisions received from August 2005 to October 2014				
Number of months	111.00	109.00	106.00	100.00
Average impact	0.55	0.63	0.37	0.72
Standard deviation (n-1)	7.66	8.56	9.34	9.56
RMS impact	7.65	8.55	9.30	9.54
Maximum impact	43.60	40.53	42.25	41.91
Minimum impact	-35.16	-37.57	-37.57	-32.36
Impacts <= 0.01 p.p.	36.9%	22.9%	18.9%	19.0%
 Impacts <= 0.05 p.p.	74.8%	64.2%	58.5%	58.0%
Impacts <= 0.10 p.p.	91.0%	83.5%	79.2%	82.0%
Impacts <= 0.20 p.p.	96.4%	96.3%	94.3%	93.0%
Monthly revisions received from November 2012 to October 2014				
Number of months	24.00	24.00	24.00	24.00
Average impact	-0.14	0.30	0.65	1.90
Standard deviation (n-1)	4.83	4.88	5.02	3.63
RMS impact	4.73	4.78	4.96	4.03
Maximum impact	7.93	7.95	8.00	8.64
Minimum impact	-13.69	-11.06	-11.25	-5.01
Impacts <= 0.01 p.p.	37.5%	25.0%	25.0%	20.8%
 Impacts <= 0.05 p.p.	75.0%	70.8%	62.5%	66.7%
Impacts <= 0.10 p.p.	91.7%	91.7%	91.7%	100.0%
Impacts <= 0.20 p.p.	100.0%	100.0%	100.0%	100.0%

The reduction of the impact of revisions since November 2012 on the M1 growth rate can also be observed by comparing Figures 5 and 6.

Figure 5

Impact of cumulative revisions received monthly from August 2005 to October 2014 on the initially released M1 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)

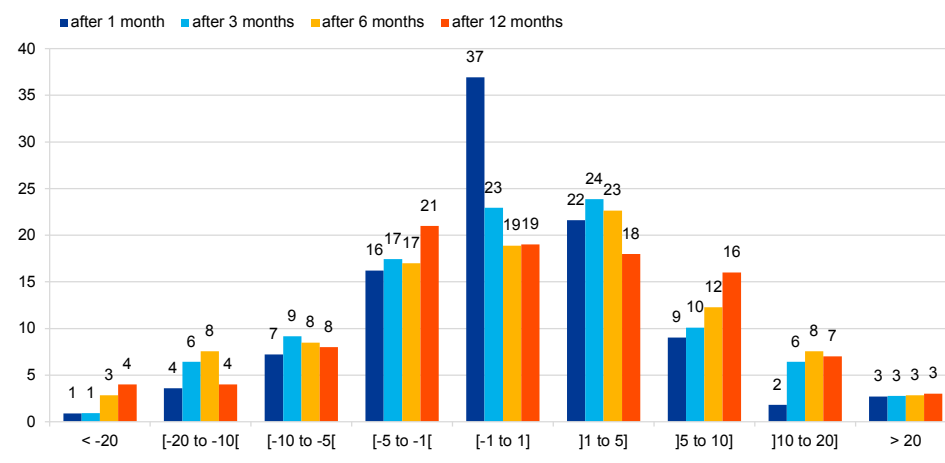
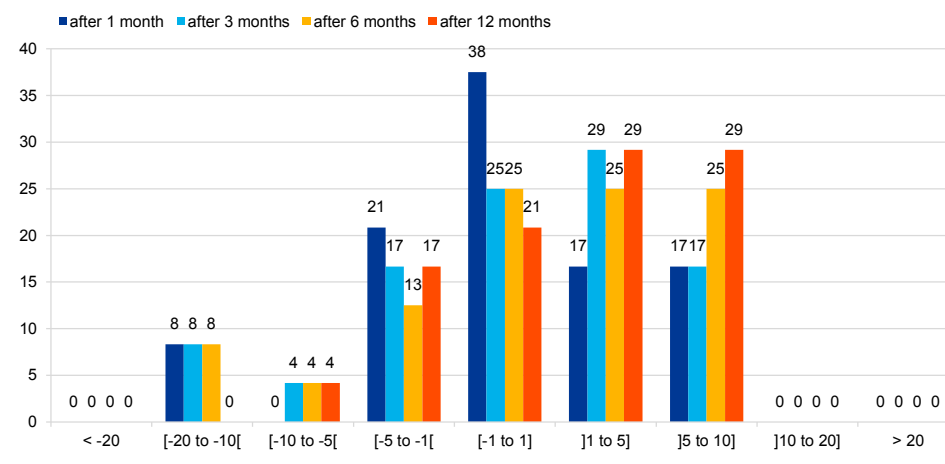


Figure 6

Impact of cumulative revisions received monthly from November 2012 to October 2014 on the initially released M1 growth rates

(Number of occurrences averaged over 100 months; Hundreth of percentage point change to initial release)



3.1.1.2 Revisions to components of euro area monetary aggregates

The following three charts present the cumulative impacts of revisions to components of the monetary aggregates as they have developed over time.

In order to keep the presentation concise, only the impact of the revisions at time lags t+3 and t+12 is shown. As no further significant revisions are expected after t+3, the cumulative impact of all revisions at t+12 is not expected to bring additional changes to the revisions, which is indeed the case, as shown in the three charts

(Figures 7 to 9): all lines plotted at t+3 and at t+12 for the same components are very close.

The same reference period, January 2008 to August 2014, is used for all charts. This time range was selected to provide a clearer picture of the overall trend of the impact of revisions on the growth rates, with the result that the impact has generally lessened since 2011.

Figure 7 shows the impact of revisions on two components of the M1 monetary aggregates, namely “currency in circulation” and “overnight deposits”. With regard to revisions received after 2013, some were made to “overnight deposits” for reference periods between December 2013 and March 2014. These were confirmed as “ordinary” revisions, which are revisions provided in the following month in order to adjust the figures initially released as “provisional”. The most significant ones were a result of a limited number of reporting agents transmitting accurate figures with some delay.

Figure 7
Impacts of revisions to M1 components at T+3 and T+12 months

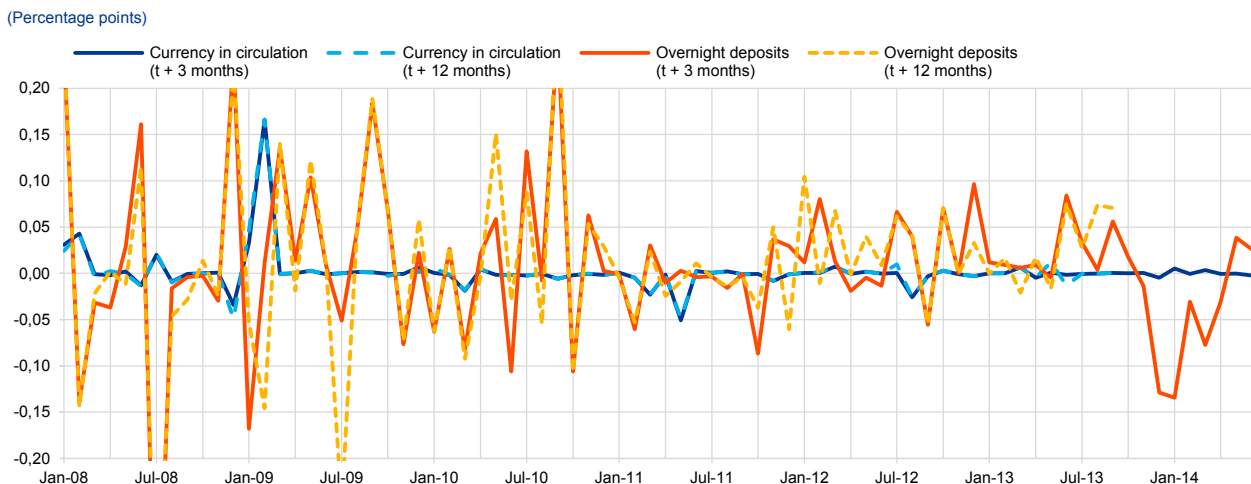


Figure 8 shows the impact of revisions on two components of M2 – M1, namely “deposits with an agreed maturity of up to 2 years” and “deposits redeemable at notice of up to 3 months”.

With regard to revisions made after 2013, only the two reference periods June and July 2013 were affected by significant “ordinary” revisions to the “deposits with an agreed maturity of up to 2 years” component.

Figure 8
Revisions to M2 - M1 components at T+3 and T+12 months

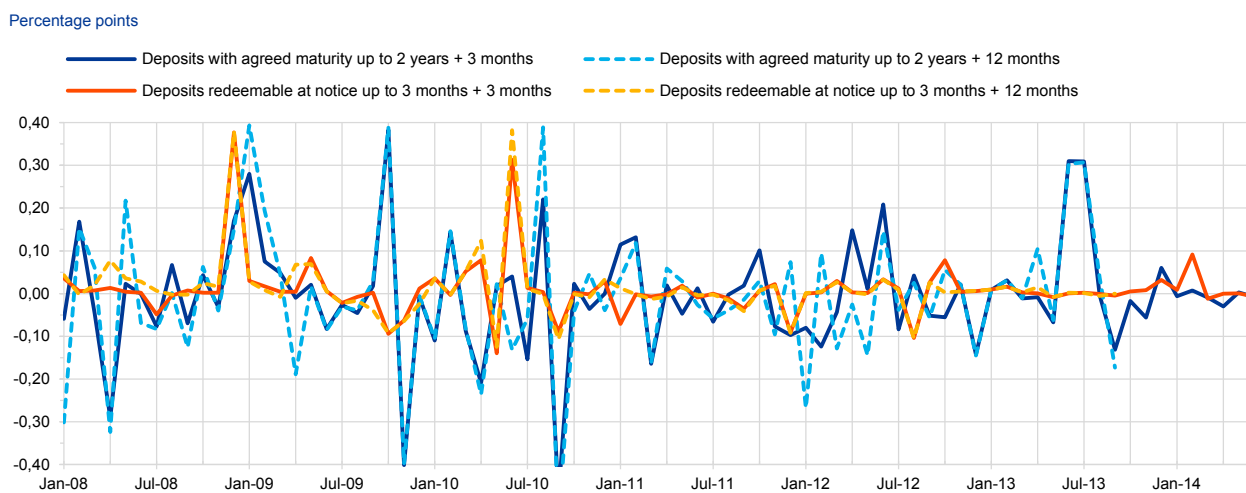
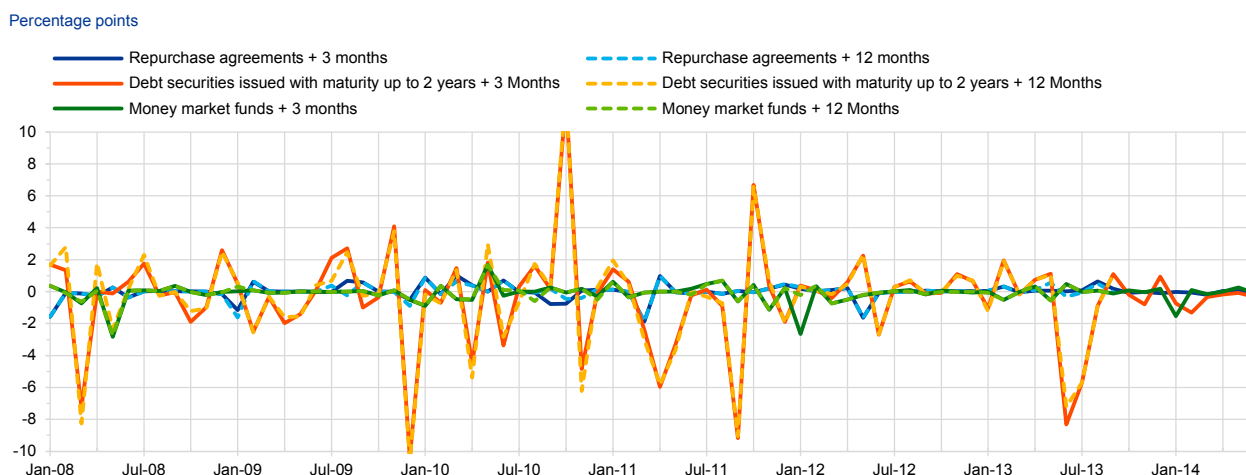


Figure 9 shows the impact of revisions on three components of M3 – M2, namely “repurchase agreements”, “debt securities issued with a maturity of up to 2 years” and “money market funds”.

With regard to revisions made after 2013, again only the two reference periods June and July 2013 were affected by significant “ordinary” revisions to the “debt securities issued with a maturity of up to 2 years” component. Of the three series, “repurchase agreements” are typically the least revised, followed by “money market funds”. These revisions must also be seen in the context of rather large flow movements and relatively small outstanding amounts in the underlying series.⁵³ This leads to volatile month-on-month component growth rates with ultimately little impact on the growth rate of the broad M3 monetary aggregate.

⁵³ Attention must be given to the ranges of the scale of impact of the revisions displayed in the charts. For (M3 – M2), it reaches 10.0 p.p., for (M2 – M1), it reaches 0.4 p.p. and for M1 it reaches 0.2 p.p.

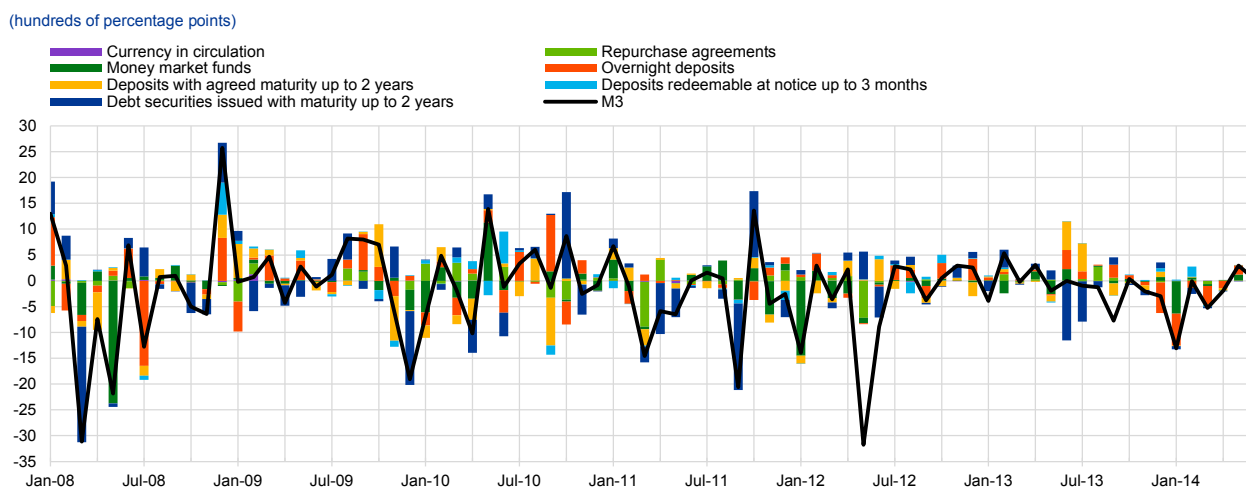
Figure 9
Revisions to M3 - M2 components at T+3 and T+12 months



3.1.1.3 Contributions of instruments to overall m3 revisions

In order to assess the contributions of individual instruments to the revisions of M3, the share of each instrument within the aggregate needs to be taken into account. Figure 10 shows that the largest contributions to overall M3 revisions stem primarily from revisions to “debt securities issued with maturity below 2 years”, “overnight deposits”, “money market funds” and, more recently, “deposits with agreed maturity up to 2 years”.

Figure 10
Break down of contributions to M3 revisions



3.1.1.4 Overall assessment of the revision analysis of BSI statistics

The analysis shows that revisions to the month-on-month growth rates of both the broad monetary aggregates M3 and M2 for the euro area continue to be very limited. Overall, at t+1, 73% of all revisions received since August 2005 have had an impact lower or equal to 0.05 p.p. on the growth rates, which is the metric for an unchanged growth rate. This ratio is 92% for all revisions received since November 2012. At time lag t+3, the ratio for unchanged growth rates is 61% for those received since August 2005 (83% for those received since November 2012). At time lag t+6, the ratio is 58% for those received since August 2005 (75% for those received since November 2012) and at time lag t+12 the ratio is 59% (67% for those received since November 2012). Furthermore, the impact of revisions on any growth rate after one year is lower on average than +/-0.095 p.p. for those received since August 2005 and 0.057 p.p. for those received since November 2012.

The concentration of revisions to the M1 month-on-month growth rate between -0.05 and +0.05 p.p. is 75% at t+1 and 58% at t+12 for those received since August 2005 (respectively 75% and 67% for those received since November 2012). Although a larger number of revisions exceeding 0.20 p.p. in absolute terms could be observed for M1 than for M2 or M3 for those received since August 2005, this is no longer an issue for those received since November 2012. Among the M3 components, revisions to debt securities issued are most frequent, but have little impact on M3 owing to the fact that the share of this instrument in broad money is now well below 2%.

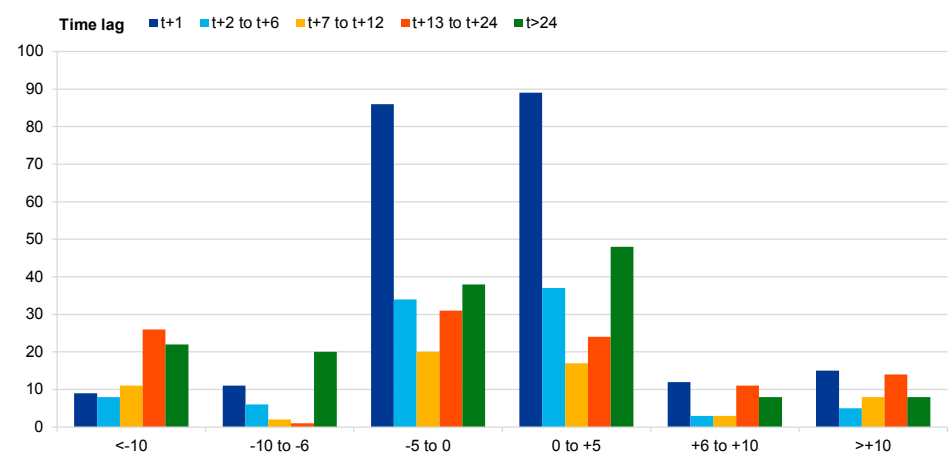
3.1.2 Revision analysis of the euro area MFI interest rates statistics

In the following analysis, data received between October 2012 and October 2014 covering reference periods January 2003 to September 2014 have been used to analyse monthly data on euro area aggregates. Only revisions equal to or greater than 1 b.p. have been considered for the purpose of the analysis, as revisions of less than 1 b.p. are not visible.

As shown in Figure 11, revisions to the euro area aggregates for MFI interest rate indicators are very small and follow the expected shape of a higher concentration of revisions in the lower range (-5 to +5 b.p.) and with a small time lag (t+1). This means that after an initial revision has taken place, which usually happens in the month after the initial release, there are usually no further significant revisions in the subsequent periods.

Figure 11**Revisions of euro area aggregates of MFI interest rates statistics**

(number of occurrences; basis points)



Around 80% of all revisions are of less than or equal to 10 b.p. (see Table 5), which is in line with the requirement set out in Article 2 of Regulation ECB/2013/34 which states that the maximum random error at national level does not on average exceed 10 b.p. at a confidence interval of 90%. As regards the time lag, a substantial number of revisions happen in the month after the initial release, and are known as ordinary revisions. As regards the other revisions, many of them were due to (i) a one-off revision of a few time series by one reporting agent, solving some technical issues affecting the calculation of certain aggregates and (ii) the reclassification of some loans into the “Revolving loans and overdrafts” category. After removing these ad hoc revisions, the remaining exceptional revisions can be divided as follows: 27% of the revisions refer to the previous 12 reference periods, 12% refer to reference periods from the previous 12 to 24 months, and 13% were revisions to statistics from reference periods prior to 24 months ago (see Table 4), thus showing that when the time lag increases, the number of revisions decreases.

Table 4**Number of revisions per time lag**

Time lag	Number of revisions	Total number of revisions (%)	Number of ad-hoc revisions	Total number of revisions without ad-hoc revisions (%)
t+1	222	35%	2	48%
t+2 to t+12	154	25%	29	27%
t+13 to t+24	107	17%	54	12%
t>24	144	23%	83	13%

Table 5
Number of revisions per range

Range (in b.p.)	Number of revisions	Total number of revisions (%)	Number of ad-hoc revisions	Total number of revisions without ad-hoc revisions (%)
-5 to +5	424	68%	61	79%
-10 to -6 and +6 to +10	77	12%	41	8%
> +/-10	126	20%	66	13%

The absolute mean of revisions to the euro area aggregates for MIR indicators is 5.8 b.p. overall and the bias (simple mean) is 2 b.p. with all time lags taken into account.

It should also be highlighted that the number of revisions is very small compared with the number of indicators used for the analysis (83)⁵⁴ and the potential number of reference periods revised in the analysis (from September 2014 back to January 2003 with a monthly frequency). Furthermore, it is worth noting that 14% of the indicators in the study were not revised during the period under analysis.

Overall, in comparison to the number of observations, the number and size of revisions for the MFI interest rate statistics at the euro area level are small, which demonstrates their reliability. The number of exceptional and ad hoc revisions, as opposed to ordinary revisions, shows that these statistics are being continuously updated, which in turn plays an important role in the continuous improvement of the accuracy of these statistics.

3.2 Quality measures under preparation

3.2.1 MFI balance sheet statistics

A quantitative comparison between the b.o.p. statistics and MFI balance sheet statistics was included in the previous quality report on euro area MFS statistics⁵⁵ and in the last quality report on euro area b.o.p./i.i.p. statistics.⁵⁶ The objective is to provide a yearly comparison of the two datasets on an alternating basis in the MFS quality report and in the b.o.p./i.i.p. report, with a focus on loans, deposits and non-euro cash holdings.

Even though, in principle, both MFI balance sheet and b.o.p. statistics comply with international statistical standards, differences can be identified with regard to their practical implementation, including the use of different statistical sources, timeliness of data reporting and simplifications in one or other of the reporting systems, which are accepted for the sake of minimising the reporting burden. In terms of compilation

⁵⁴ The analysis covers the 101 rates indicators defined in Regulation ECB/2009/7 and Guideline ECB/2007/9. From these 101 indicators, the indicators which are totals or aggregates of sub-indicators have been removed so as to avoid counting any revisions twice.

⁵⁵ 2012 quality report on MFS statistics, available at: <http://www.ecb.europa.eu/pub/pdf/other/euroareamonetaryandfinancialstatistics201306en.pdf>

⁵⁶ 2013 quality report on balance of payment and international investment position statistics, available at: <http://www.ecb.europa.eu/pub/pdf/other/euroareabalanceofpaymentsiipstatistics201404en.pdf>

systems, the b.o.p. transactions for the MFI sector are reported directly by the MFIs in some countries, whereas in the BSI data, transactions are derived from differences in stock data (adjusted for reclassifications, foreign exchange rate changes and price revaluations).

The implementation in 2014 of the ESA 2010 for MFI balance sheet statistics and the BPM6⁵⁷ for b.o.p. statistics should help to minimise these differences. A new tool will thus be developed to accommodate the changes made to the data structure and enable a meaningful quantitative comparison between both datasets. In the meantime, technical issues with the recent migration of both datasets have led to the discontinuation of the comparison for this quality report.

3.2.2 MIR statistics – synthetic MAE

Following the report produced by the second Technical Expert Group on MFI interest rate statistics⁵⁸, the synthetic MAE was introduced in the MFS Guideline ECB/2014/15 as a measure of the sample quality in case NCBs were to select the largest institutions per stratum. The actual synthetic MAE should not exceed a time-varying MAE threshold assuming a 10 b.p. error difference in each stratum and indicator. The maximum random error is still used if NCBs apply random sampling and should not exceed 10 b.p. on average at a confidence level of 90%. Following the introduction of the synthetic MAE, the additional provisions defined in Annex I, Part I, Section IV of Regulation ECB/2001/18 on the coverage of the resident potential reporting population and the coverage of the stock of euro-denominated deposits and loans have been removed as they were no longer necessary.

No data on the MAE is yet available, as these requirements were only applicable as of January 2015.

⁵⁷ ECB BPM6 implementation, available at:
<http://www.ecb.europa.eu/stats/external/bpm6/html/index.en.html>

⁵⁸ “Quality measures in non-random sampling. MFI interest rate statistics”. *European Central Bank Statistics Paper Series*, No 3, ECB, Frankfurt am Main, September 2013.
(<http://www.ecb.europa.eu/pub/pdf/other/ecbsp3en.pdf>)

Abbreviations

AnaCredit	analytical granular credit and credit risk datasets	M1	narrow monetary aggregate, comprises currency (i.e. banknotes and coins) and balances immediately convertible into currency or usable for cashless payments (i.e. overnight deposits)
b.o.p./i.i.p.	balance of payment/international investment position	M2	intermediate monetary aggregate, comprises M1 and deposits with a maturity of up to two years and deposits redeemable at a period of notice of up to three months
b.p.	basis points, the unit for the arithmetic difference in hundredths of percentage point (e.g. the increase from 1.5% to 2.4% is 90 b.p.)	M3	broad monetary aggregate, comprises M2 and marketable instruments issued by the MFI sector (such as MMF shares/units and repurchase agreements)
BPM6	IMF Balance of Payments and International Investment Position Manual (6th edition)	MAE	mean absolute error
BSI	balance sheet items	MFI	monetary financial institution, e.g. central banks, deposit-taking corporations and MMFs
CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors (established in 2003 by the European Commission, replaced by EIOPA in 2010)	MFS	monetary and financial statistics
CMFB	Committee on Monetary, Financial and Balance of Payment Statistics (established by the Council of the European Union in 1991)	MIR	MFI interest rates
CRD IV	Capital Requirements Directive IV, adopted by the European Commission in 2011 to strengthen the regulation of the EU banking sector, reflecting the Basel II and Basel III rules on capital measurement and standards	MMF	money market fund
CSDB	Centralised Securities Database, holds exhaustive information on all individual securities relevant for the statistical purposes of the ESCB (contains non-published information on over 5 million debt securities, equities and mutual fund shares issued by residents of EU Member States)	NCB	national central bank
EC	European Commission	NFC	non-financial corporation, excludes holding companies (not engaged in management) and similar captive financial institutions (on the basis of the ESA 2010)
ECB	European Central Bank	OFI	other financial intermediary, includes holding companies, excludes MFIs, IFs and insurance corporations and pension funds (on the basis of the ESA 2010)
EIOPA	European Insurance and Occupational Pensions Authority, EU financial regulatory institution established in 2010 to replace CEIOPS	POGI	post office giro institution that belongs to the sector 'non-financial corporations' (Sector 11, ESA 2010), and, as a complement to postal services, receives deposits from non-MFI euro area residents with a view to providing money transfer services for its depositors (for the purpose of Regulation ECB/2013/39)
ESA	European System of Accounts, sets out the harmonised methodology for the production of national accounts data in the EU (consistent with the SNA)	p.p.	percentage points, the unit for the arithmetic difference between two percentages (e.g. the increase from 1.5% to 2.6% is 1.1 p.p.)
ESCB	European System of Central Banks	RIAD	Register of Institutions and Affiliates Database, provides an updated and complete view of the population of MFIs operating in the EU, published daily
EU	European Union	SDW	Statistical Data Warehouse, provides all euro area statistics published by the ECB
FVC	financial vehicle corporation engaged in securitisation transactions	SEPA	Single Euro Payments Area, an EU payment integration initiative for facilitating euro-denominated bank transfers
IFRS	International Financial Reporting Standards, developed by the International Accounting Standards Board (IASB) to harmonise accounting across all countries	SHS	securities holdings statistics
IFs	non-money market investment funds	SHSDB	Securities Holdings Statistics Database, provides the ESCB with quarterly information on holdings of securities by euro area sectors and selected Reporting Banking Groups (non-published)
ISIN	International Securities Identification Number, a 12-character alphanumeric code defined in ISO 6166 that uniquely identifies a security (e.g. a bond, commercial paper, stock or warrant)	SNA	System of National Accounts, provides the international statistical standard for national accounts (adopted by the United Nations Statistical Commission)
IT	information technology	STC	ESCB Statistics Committee

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