EUROPEAN CENTRAL BANK

EUROSYSTEM

# EURO AREA MONETARY AND FINANCIAL STATISTICS 2009 QUALITY REPORT

## SUMMARY

This data quality report is a contribution to the ECB Statistics Quality Framework.[1] Euro area monetary and financial statistics have been published with a high level of quality for a decade. In 2009, all monthly press releases on monetary developments and related data on monetary financial institutions (MFI) balance sheet statistics were *issued in a timely and punctual manner*. Moreover, all other press releases, i.e. on MFI interest rate statistics (monthly), securities issues statistics (monthly), investment funds statistics (quarterly) and the list of MFIs (annual), were also published on time and in line with the advance release calendar. All underlying detailed tables and time series were regularly published in the ECB's Statistical Data Warehouse (SDW) and on the ECB's website.

A quantitative analysis of the stability of MFI balance sheet statistics shows that *revisions to the broad monetary aggregate M3 have been very small overall:* about 60% of the revisions to (quite sensitive) month-on-month M3 growth rates are below 0.05 percentage point (p.p.), and in comparison to the M3 average monthly growth rate (0.62%), the average revisions and bias (less than 0.01%) have remained very low. Among the components, the initial estimates of the M3-M2 component, and in particular debt securities issued, were the most revised. The latter component's monthly growth rates were often revised by more than one percentage point. Prior to the summer of 2007 the effects of revisions to specific components tended largely to offset each other, but between summer 2007 and end-2008, somewhat larger revisions have occurred more often and moved in the same direction. However, over the full comparison period 2005-09, first estimates were generally reliable (the mean absolute error almost equalled 0.06 p.p.). Compared with other economic statistics, these revisions are negligible and underline the accuracy of the first assessment of monthly MFI balance sheet statistics. It should also be recalled that revisions are generally necessary to improve the quality of the statistics.

*The inclusion of Slovakia* in all euro area statistics was completed successfully and on time.

The timeliness of the monthly production of *MFI interest rates* has been improved by three days, enhancing the policy impact of these statistics. Hence, because of these improvements, aggregate euro area MIR statistics (including derived indicators) are published on the 23rd working day as of May 2009, guaranteeing that the data are available at the first meeting of the Governing Council of month $t+2$ after the end of the reference period.

In addition, a consolidation of the compilation processes allowed, at the end of 2009, a stepwise reduction of two working days in the time needed from reception to publication of the *securities issues statistics*.

The monthly amounts outstanding (published since September 2006) of *short-term European paper (STEP)* and the weekly release of daily yield statistics as of April 2007, which enabled STEP to become eligible as collateral for monetary policy operations, have been complemented by a *weekly release of detailed daily amounts outstanding and new issues statistics* as of November 2009 (including the delivery of data via tables and via the Statistical Data Warehouse). This addition has increased

---

1   See http://www.ecb.europa.eu/stats/html/sqf.en.html

considerably the level of detail and the visibility of STEP statistics.

The new *Regulation concerning statistics on assets and liabilities of investment funds* (ECB/2007/8) has been successfully implemented: national central banks (NCBs) have been providing harmonised data to the ECB from February 2009 onwards. The new euro area statistics were published for the first time in December 2009, replacing the previous data set, which was based on available, often non-harmonised, national data. In addition, since May 2009 the RIAD system has been both receiving the list of investment funds that represent the reporting population from NCBs and re-disseminating the list to the NCBs on a quarterly basis. As of November 2009 this list is also available on the ECB's website.

New statistics based on the new *Regulation concerning statistics on financial vehicle corporations* (ECB/2008/30) will be collected from early 2010 for the reference period December 2009. Together with new data from the recast and updated Regulation ECB/2008/32 concerning the consolidated balance sheet of the monetary financial institutions sector (replacing Regulation ECB/2001/13), it will help to close a major gap in statistics and provide harmonised information on the *securitisation* market and risk transfer.

Work in 2009 also aimed at enhancing the new statistics on assets and liabilities of euro area *insurance corporations and pension funds*. These data will be published when timeliness and data quality meet the agreed objectives.

## I    EURO AREA MONETARY AND FINANCIAL STATISTICS

Adherence to high quality standards is considered to be a key factor in maintaining the public's confidence in ECB statistics, upon which monetary policy decisions are based. The ECB Statistics Quality Framework (SQF) sets forth the main quality principles guiding the development, collection, compilation and dissemination of ECB statistics.

This quality report has been prepared in line with the quality principles laid down in the SQF, of which a first group of six principles relates to the ECB's institutional environment: *(i) independence and accountability, (ii) mandate for data collection, (iii) impartiality and objectivity, (iv) statistical confidentiality, (v) coordination and cooperation among the members of the ESCB and with European and international organisations,* and *(vi) resources and efficiency.* The implementation of these high-level principles is considered a given for the purpose of the MFS quality report; however, references to a sample of these principles will be made in Section 1 of this report for various types of MFS statistics.[2]

The second group of the SQF's quality principles covers the statistical processes. It comprises the following two principles: *(i) sound methodology and appropriate statistical procedures, and (ii) cost effectiveness and non-excessive burden on reporting agents.* Examples of the existence and application of these principles will again be mentioned in Section 1 of this report.

The third group of quality principles according to the SQF refers to aspects of the statistical output, namely: *(i) relevance, (ii) accuracy and reliability (stability), (iii) consistency and comparability, (iv) timeliness and punctuality,* and *(v) accessibility and clarity.* Various aspects will be emphasised in Section 1 for different MFS statistics. In addition, Section 2 contains a detailed analysis of revisions to MFI balance sheet statistics aimed at assessing its quality in terms of *(ii) accuracy and reliability (stability).*

---

2   See Footnote 1 for a more detailed discussion of the general quality features for ECB statistics.

| Area | Principles |
|---|---|
| 1 Institutional environment | (i)  independence and accountability<br>(ii)  mandate for data collection<br>(iii)  impartiality and objectivity<br>(iv)  statistical confidentiality<br>(v)  coordination and cooperation among the members of the ESCB and with European and international organisations<br>(vi)  resources and efficiency |
| 2 Processes | (i)  sound methodology and appropriate statistical procedures<br>(ii)  cost effectiveness and non-excessive burden on reporting agents |
| 3 Output | (i)  relevance<br>(ii)  accuracy and reliability (stability)<br>(iii)  consistency and comparability<br>(iv)  timeliness and punctuality<br>(v)  accessibility and clarity |

The table above provides an overview of the quality principles adopted by the ECB.

## 1.1 MONETARY FINANCIAL INSTITUTIONS BALANCE SHEET STATISTICS

In 2009, production of MFI balance sheet statistics according to Regulation ECB 2001/13, now recast and updated as ECB/2008/32 *(see quality principle 1 (ii))*, continued in close cooperation between the ECB and NCBs *(1(v))*. Transmission deadlines as laid down in Guideline ECB/2007/9 [3] were met by all NCBs, and all monthly press releases on monetary developments and related data on MFI balance sheet statistics were issued without delay, i.e. in general on the 19th working day following the reference month *(3(iv))*. The underlying data were made available in the ECB's Statistical Data Warehouse and on the ECB's website *(3(v))*. Data for the most recent reference period is flagged as provisional and may be revised in the following reference period. These "regular" revisions generally have an impact of less than +/- 0.1 p.p. on the annual growth rate of M3 *(3(ii))* (further quantitative information on the revisions relating to MFI balance sheet statistics can be found in Section 2). In each production round, a range of quality checks and time-series analyses are performed on both the national and the euro area data *(3(iii))*.

MFI balance sheet statistics are, in principle, collected by means of a census, i.e. the full population of MFIs is generally expected to report monthly and quarterly. However, NCBs may grant derogations to MFIs, provided that the MFIs which fully contribute to the monthly consolidated balance sheet account for at least 95% of the total MFI balance sheet in terms of stocks, in each participating Member State *(2(ii))*. NCBs which grant derogations to small MFIs must gross up the data to a full coverage for the purpose of monthly and quarterly balance sheet item (BSI) statistics *(2(i))*.

This option of "cutting off the tail" is currently used by seven euro area NCBs, where either certain item breakdowns are not collected from "tail institutions" or their data are collected at a lower frequency or timeliness than for the "full reporters". As a consequence, a small percentage of the euro area statistics are estimated. One of these NCBs implemented measures in 2009 to improve the grossing-up of the data.

Further quality enhancements were made by some NCBs (i.e. the inclusion of Irish credit unions in the reporting population) as well as by the ECB (i.e. the improved exchange rate adjustment procedure, the publication of seasonally adjusted loan series and of loans adjusted for securitisation); at the same time, the close cooperation between NCBs and the ECB led to a successful extension of the data collected on the sub-items of remaining assets/ remaining liabilities and to improved flow data

3  OJ L 341, 27.12.2007, p.1.

for money market fund shares/units held by non-residents of the euro area.

Sound procedures for euro area enlargements developed at the time of previous enlargements (Greece on 1 January 2001, Slovenia on 1 January 2007, and Cyprus and Malta in January 2008) have again enabled the smooth integration of Slovakia, which joined on 1 January 2009 *(2(i))*.

The compliance of MFIs with Regulation ECB/2001/13 is being monitored systematically by NCBs and the ECB at a monthly frequency *(3(ii))*.[4] *A review of the legal basis for the non-compliance procedure is currently being conducted.*

MFI balance sheet statistics also serve as a building-block for the quarterly integrated (non-financial and financial) euro area accounts. Work continues to investigate discrepancies in the statistical data included, for example between the net external assets of MFIs in monetary and external statistics, and to reconcile data for specific instruments.[5]

The updated/recast Regulation ECB/2008/32, approved by the Governing Council in December 2008,[6] is in the process of being implemented. Both the NCBs and the ECB are undertaking preparatory work towards the first transmission of data according to the new regulation, scheduled for July 2010, providing reporting agents and NCBs with an appropriate lead time for implementation work. The updated regulation requires an enlarged set of data to cater for a better analysis of monetary developments, including, for example, information on loan sales and securitisations or on loans backed by real estate collateral. Before their inclusion in the updated regulation was agreed upon, the new user needs had to undergo a strict merits-and-cost procedure, during which some of the initially required features were identified as too costly and consequently dropped *(2(ii))*. ECB/2008/32 also contains extended provisions for cutting off the tail, with the objective of minimising the statistical reporting obligations of many reporting institutions *(2(ii))*. The application

of these provisions, which also differentiate in terms of the size of the contribution of individual countries to the euro area balance sheet, will not lead to a deterioration of the euro area results *(2(i))*.

Initial reporting under the new statistical requirements is scheduled to begin for the reference period June 2010 (except for MFI securitisation and FVC statistics, for which initial reporting will deal with the data for December 2009, as these data have a high priority in the current context); publication of the new data is targeted for early 2011.

## 1.2 LIST OF MFIs

In 2009, production of the list of MFIs, as collected according to ECB/2007/9 *(1(ii))*, continued in close cooperation between the ECB and NCBs *(1(v))*. In 2009, all NCBs fulfilled the MFI ad-hoc updating requirements laid down in ECB/2007/9 *(3(iv))*. Updates of MFI data were made available at the end of every month in the ECB's Statistical Data Warehouse and on the ECB's website *(3(v))*. To ensure that the list of MFIs is homogenous and accurate, regular monitoring is undertaken either through dedicated correspondence with NCBs or via automated facilities. Monitoring measures have included automated checking of foreign branches and a consistency check between the list of MFIs and the list of eligible counterparties for monetary policy operations *(3(iii))*.

In summer 2009 the STC established a Task Force on the future of the 'Register of Institutions and Assets Database' (RIAD) with the mandate to investigate both the need to develop RIAD into a statistical business register

---

4 Notice of the ECB on the imposition of sanctions for infringements of balance sheet statistical reporting requirements OJ C 195, 31.7.2004, p. 8.
5 E.g. valuation rules and accrual accounting conceptually differ between the MFI balance sheet data and the System of National Accounts framework and thus require adjustment and reconciliation work to be undertaken.
6 Regulation (EC) No 25/2009 of 19 December 2008 concerning the consolidated balance sheet of the monetary financial institutions sector (recast) (ECB/2008/32), OJ 20.01.2009, L15/14-L15/62.

and the need to develop unambiguous definitions for European 'large complex financial groups' (LCFGs) in order to eventually include this information in the RIAD. The final report to the STC, which is expected in March 2010, is expected to comprise suggestions on the collection of additional attributes of MFIs and of information concerning the linkage among financial corporations.

## 1.3 MFI INTEREST RATE STATISTICS

In 2009, production of MFI interest rate statistics according to regulation ECB 2001/18, now updated as ECB/2009/7 *(1(ii))*, continued in close cooperation between the ECB and NCBs *(1(v))*. Transmission deadlines laid down in Guideline ECB/2007/9 were met by all NCBs (i.e. transmission by the 19th working day following the reference month), and all monthly press releases on monetary developments and related data on MFI interest rate statistics were issued without delay *(3(iv))*. The underlying data were made available in the ECB's Statistical Data Warehouse and on the ECB's website *(3(v))*. In 2009, the timeliness of the monthly production of MFI interest rates improved, allowing the data to be published three days earlier, i.e. on the 23rd working day following the end of the reference period. This increased timeliness has enhanced the policy impact of these statistics, particularly as the data are generally available at the first meeting of the Governing Council of month $t$+2 after the end of the reference period *(3(i))*.

Data for the most recent reference period is flagged as provisional and may be revised in the following reference period. Revisions received from the countries usually occur in the following month and refine data for the previous month(s); their impact on the euro area aggregates is generally negligible. Data-checking procedures are similar to those used for the MFI balance sheet statistics. Also, as from this year, pre-ins MIR statistics are published on the 23rd working day *(3(iii))*. The update of Regulation ECB/2001/18 concerning statistics on interest rates applied by MFIs to deposits and loans vis-à-vis households and non-financial corporations (ECB/2009/7),

aims to meet new statistical requirements that stem from financial innovation and that will contribute to improving the monetary and economic analysis *(3(i)*, *3(ii)*, *3(iii))*. Similarly to the additional MFI balance sheet data (under ECB/2008/32), the first reporting under the new statistical requirements is scheduled to begin in mid-2010 for the reference period June 2010.

## 1.4 SECURITIES ISSUES AND STEP STATISTICS

In 2009, production of securities issues statistics according to the MFS Guideline ECB/2007/9, as amended *(1(ii))*, continued in close cooperation between the ECB and NCBs *(1(v))*. All monthly press releases on developments in the securities issues statistics were issued without delay. The underlying data were made available in the ECB's Statistical Data Warehouse and on the ECB's website *(3(v))*.

Further, a consolidation of the compilation processes allowed, at the end of 2009, a stepwise reduction of *two working days in the time needed from reception to publication* of the securities issues statistics. As a result, the October 2009 updates were ready to be published on the 8th working day of the second month after the end of the reference period (instead of the 10th working day previously).

Progress on the Centralised Securities Database (CSDB) is gradually offering opportunities to review and analyse the aggregated SEC data. Furthermore, the CSDB is supposed to supplement the coverage of SEC statistics in some Member States, in particular regarding the reporting by other financial intermediaries and non-financial corporations *(2(ii), 3(ii), 3(iii))*.

On 9 June 2006, Euribor ACI and Euribor FBE adopted the Short-Term European Paper (STEP) Market Convention. The Convention requires issuers to implement any arrangements with the securities settlement systems, the issuing and paying agents, the dealers, the arrangers or any other relevant entity that are necessary to provide the eligible data provider with complete and accurate data for the production

of statistics by the ECB *(1(ii))*. Aggregated daily yields and spreads for euro-denominated STEP market securities have been released weekly (first working day at 2 p.m.) since April 2007 on the ECB's website and have been disseminated into internal and external SDW since August 2009 *(3(v))*. Statistics were published on a timely basis in 2009, with three exceptions, in which the maximum delay was under three hours *(3(iv))*. In addition, weekly publication of daily amounts outstanding broken down by issuer sector, maturity, rating category and currency; new issues broken down by issuer sector, maturity and rating category; and spreads between the EONIA and the yields on new issues of euro-denominated STEP securities, also broken down by issuer sector, maturity and rating category, began for the first time on 30 November 2009 *(3(i, ii, v))*. On this occasion, the web design was upgraded and, furthermore, all series are also disseminated via the Statistical Data Warehouse, thereby increasing considerably the visibility of the STEP statistics *(3(v))*. For all statistics, algorithms are designed that guarantee confidentiality for yields of individual programs *(1(iv))*. Moreover, technical preparations for releasing outstanding amounts data by programme level in 2010 are being carried out.

## 1.5 OTHER FINANCIAL INSTITUTIONS (OFI) STATISTICS

### 1.5.1 INVESTMENT FUNDS STATISTICS AND LIST

Regulation ECB/2007/8 [7] establishes the framework for the new statistics on assets and liabilities of investment funds *(1(ii))*. The monthly data transmissions to the ECB started in February 2009 with reference to December 2008. The inaugural publication, accompanied with a press briefing, took place in December 2009 with reference to September 2009 data, according to plan. The data were made available in the ECB's Statistical Data Warehouse and on the ECB's website *(3(v))*.

These statistics are now available and offer the following new features: (i) harmonised concepts underlying the statistics that follow the ESA 95, ensuring high comparability;

(ii) full coverage across the euro area countries; (iii) data on transactions during the reference period (in addition to the existing data on outstanding amounts at the end of the period); (iv) detailed breakdowns of assets and liabilities; (v) new breakdowns for the investment fund sector, now also showing hedge funds and open/closed-end funds; (vi) monthly publication of key information and quarterly publication of more detailed information; and (vii) the timely release of data (seven weeks after the reference period).

Data compilation at the NCB level uses the CSDB to produce the required statistical breakdowns and also, where relevant, valuations. This has allowed the investment funds to report security-by-security data (as available in their internal systems), thus reducing their reporting burden *(2(ii))*.

Before December 2009, investment funds data were published quarterly on the basis of non-harmonised data available at the national level. The pre-announced publication calendar for the euro area statistics was adhered to in 2009 *(3(iv))*. As laid down in ECB/2007/9, since May 2009 the RIAD system has been receiving from and re-disseminating to NCBs the quarterly list of investment funds that represent the reporting population with a size of close to 50,000 institutions. As of November 2009 this list and a number of further useful tables are also available on the ECB's website *(3(v))*. [8]

### 1.5.2 FINANCIAL VEHICLE CORPORATIONS STATISTICS AND LIST

The new Regulation concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (ECB/2008/30) [9] and the related

---

[7] Regulation (EC) No 958/2007 of the ECB of 27 July 2007 concerning statistics on the assets and liabilities of investment funds (ECB/2007/8)OJ L 211, 14.8.2007, p. 8

[8] http://www.ecb.europa.eu/stats/money/mfi/funds/html/index.en.html.

[9] Regulation (EC) No 24/2009 of 19 December 2008 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (ECB/2008/30), OJ 20.01.2009, L15/1-L15/13.

partial update of Guideline ECB/2007/9 (Guideline ECB/2008/31) were adopted by the Governing Council on 19 December 2008. They set the framework for reporting new statistics regarding securitised asset holdings and FVC issuance of securities backed by these assets. These new statistics, combined with enhanced reporting by MFIs involved in securitisation transactions, will fill a major gap in the ESCB statistics and will improve transparency in a market segment that has become very complex and is widely considered opaque. The first reporting of the FVC statistics to the ECB will take place in February 2010.

A dedicated list of FVCs that will also support data collection, statistics compilation and analysis of developments in this sector will be maintained in the RIAD application and thus be available within the ESCB as of January 2010. This list will also be published on the ECB's website.

## 1.6 INSURANCE CORPORATIONS AND PENSION FUNDS STATISTICS

Work is under way to enhance the available statistical information on insurance corporations and pension funds (ICPFs). The ECB has been receiving the quarterly ICPF statistics, transmitted by NCBs under a gentlemen's agreement, since March 2008 (first data: ref. December 2007) *(1(ii) and (v), 2(ii))*. While the statistics are under development and not yet published, in the medium term the dissemination and publication of the ICPF data should, in addition to their direct analytical potential, contribute (as a 'building block' for the ICPF sector) to the compilation of the euro area financial accounts (EAA) *(3(iii) and (iv))*.

Significant progress has been achieved in the field of ICPF statistics, mainly for stock data. Improvements in the data reported by euro area NCBs have enabled the ECB to implement and enhance quarterly euro area estimates *(3(i))*. Nevertheless, substantial further improvements are required before ICPF statistics can be used regularly for EAA early estimates, and before a

possible publication of the new ICPF statistics. These improvements mainly concern (i) the transactions data, so that they can be used to derive growth rates and as EAA inputs *(3(iii))*, and (ii) timeliness (target for the transmission of data to the ECB is T+85 calendar days, working towards T+80 in 2010) and the timely transmission of potential revisions to the data (within two working days during quarterly production rounds) *(3(iv))*. While these are the short-term priorities for improvement, longer-term work will aim at harmonising recording practices (e.g. for pension funds) *(2(i))* and meeting additional user demands (e.g. for financial stability analysis, and the demands of European Commission users *(3(i))*.

The ECB has continued to coordinate work on ICPF statistics with the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) *(1(v))*. The objective is to ensure, where possible, consistency of statistical concepts and requirements, and to avoid the duplication of reporting requirements for statistical and supervisory purposes.

## 1.7 PAYMENTS AND SECURITIES SETTLEMENT SYSTEMS STATISTICS

Payments statistics (and securities clearing, trading and settlement) are partly collected from all 27 EU NCBs, mainly according to the MFS Guideline ECB/2007/9,[10] as amended *(1(ii))*, but they are also collected from a number of other sources. In 2009, data production continued in close cooperation between the ECB and NCBs *(1(v))*. Annual payments statistics were published on 11 September 2009, for the reference period of 2008. This reflects a timeliness of nine months, and the target release date was met *(3(iv))*.

In 2009, as in the previous year, payments statistics were made available to the public in an assortment of ways. An annual press release was published with key features of the data on 11 September 2009 on the ECB's

10  OJ L 341, 27.12.2007, p.1.

website. Furthermore, there is online access to methodological and background information, as well as euro area national data via the ECB's website, and time series and pdf tables are accessible via the SDW.

In 2009, in response to both internal and external requests, the latter catered for via the "statistics hotline", access was provided in the SDW to compiled versions of payments statistics pdf tables at the country, euro area/pre-ins and EU levels.[11] The Endnotes ("Notes to tables") have also been placed more prominently in the payments statistics "Reports" section of the SDW *(3(v))*.

## 1.8 FINANCIAL MARKETS AND INSTRUMENTS STATISTICS

In 2009, the automated Market Data Provision (MDP) system was fully up and running, enabling the compilation of relevant financial market indicators, mainly for internal use. The MDP, coupled with the SDW, ensured a smooth and stable production facility for financial markets statistics and indicators derived from data obtained from commercial sources *(3(v))*.

On 17 December 2009, the governors of 25 NCBs signed the Financial Markets Data usage agreement, which will enable their NCBs to access a significant subset of MDP financial markets data via the ESCB version of the SDW as of early January 2010.

Since July 2007, daily euro area government bond yield curves have been produced and published punctually on the ECB's website daily at noon, including in 2009 *(3(iv))*. They are also disseminated at the same time to the ESCB.

Owing to extraordinary financial market conditions during 2009, there were many specific data requests for both MDP and euro area yield curve statistics, mainly requests for new indicators and monitoring of yield spreads between countries and between credit ratings.

## 1.9 STATISTICAL INDICATORS USED FOR THE ANALYSIS OF FINANCIAL INTEGRATION AND FINANCIAL STABILITY

According to Article 105.5 of the Treaty establishing the European Community, and to Articles 3 of the Statute of the ESCB and of the ECB, "the ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system." *(1(ii))* Following this mandate, the Directorate General Statistics of the ECB has been involved into a number of activities related to the production of indicators for financial integration and stability.

As for financial integration, the range of indicators included in the annual ECB report on "Financial integration in Europe" has been extended incrementally over the last few years. Most indicators are updated twice a year and published on the web. The most recent issue of the report was published on time at the beginning of April 2009, and the infra-annual update of indicators was carried out in October 2009 *(3(iv), (v))*.

Regarding financial stability, since 2007 the ECB's Directorate General Statistics has been responsible for producing the statistical annex of the Financial Stability Review, published twice a year, typically in June and December (in 2009 publication took place on time on 15 June and 18 December) *(3(iv))*. The statistical annex includes a wide range of indicators of interest for financial stability analysis, covering developments of both financial and non-financial sectors and relating to both euro area and global markets. In the course of 2009 the statistical annex was completely reviewed with the aim of providing a more comprehensive and stable product. In particular, the production technical system is now based on the integration of various (mostly automated) modules, and as a result the indicators can be derived at any point in time to

11 E.g. compiled tables for euro area countries: http://sdw/reports. do?node=1000001961

support the analyses in a timely manner *(3(i))*. In addition, the methodology behind existing indicators has been reviewed so to also increase quality and consistency across sectors and reference areas, while a set of new indicators has been included to improve the coverage.

Moreover, the Eurosystem statistics function provides indicators on the consolidated balance sheet of credit institutions and structural financial indicators, both derived from existing data collections, to support the production of annual reports relating to financial stability.

The ECB's Directorate General Statistics is also responsible for producing the statistical annex of the ECB report on EU banking sector stability, the most recent issue of which was published in August 2009. The consolidated banking data are the main statistical input for this report and are also published on the ECB's website *(3(v))*. Thus, in 2009, joint efforts by the ESCB considerably improved the timeliness, coverage and degree of harmonisation of these statistics *(3(i), (ii), (iii), (iv))*.

Finally, statistics on financial structural indicators are collected and compiled according to Annex III of the Statistical Guideline ECB/2007/9 (as amended) *(1(ii))*; these are the main statistical source for the ECB report on EU Banking Structures.

## 1.10 EURO MONEY MARKET SURVEY

Since the introduction of the euro, there has been an increasing demand for timely and accurate statistical data on euro money market activity. To satisfy this need, the Eurosystem has been collecting second-quarter data on euro money market activity since 1999 on a voluntary basis *(1(ii))*. The data include daily average turnover for a variety of market segments (unsecured market, repo market, derivatives market, short-term securities market) and maturity ranges (from overnight to over ten years).

The ECB's Directorate General Statistics took over the production of the Euro Money Market

Survey (MMS) in 2007. Two years later, in the 2009 round, the MMS production reached a steady state of stable and timely data collection and dissemination. The most recent data, relating to the second quarter of 2009, were published on time on 24 September 2009 *(3(iv))* and announced in a press release. Furthermore, the publication entitled "Euro Money Market Survey" has been put on the ECB's website. It summarises main developments in the euro money market in charts and tables. Finally, data have been made available via the SDW *(3(v))*.

## 2 REVISION ANALYSIS OF THE EURO AREA MFI BALANCE SHEET STATISTICS

### 2.1 BACKGROUND

The revision analysis in this section evaluates the reliability of first releases. This is an important aspect of quality, in addition to compliance with harmonised definitions, timely incorporation of methodological changes and consistency with other statistics (e.g. external statistics). However, small revisions of first estimates are not necessarily proof of accurate measurement, and in principle, revisions improve statistics.

The revision policy for MFI balance sheet statistics entails few restrictions as, in principle, it allows data to be revised at any release. The only restriction is that revisions to the monthly data shall be submitted when quarterly statistics are submitted to ensure consistency between the monthly and quarterly statistics. A distinction is made between "ordinary" and "exceptional" revisions. Data are generally considered "provisional" upon the first release; therefore, revisions can be expected in the next update at *t*+1. Data collected quarterly provide more detailed breakdowns and can thus, in principle, lead to the detection of errors in the monthly data and to corresponding revisions. Exceptional revisions owing to, e.g. reclassifications and improved reporting procedures, can be made at any release.

In the following analysis, the vintages in the ECB's Statistical Data Warehouse (July 2005 to

November 2009) covering data for the reference periods June 2005 to October 2009 have been used to analyse monthly data on monetary aggregates and components as regularly published in the press release.[12] This revision analysis updates the one presented in the 2008 Data Quality Report and extends the data range used by 12 months.

## 2.2 METHOD OF ANALYSIS

In order to assess the revisions of the monthly monetary aggregates and components, differences between the revised, non-seasonally adjusted,[13] period-on-period growth rates at a pre-determined lag and the first release are calculated. The period-on-period growth rate is calculated as the ratio between the monthly flow and the respective stock at the end of the preceding period. Expressed as a formula:

$$g = \frac{F_t^{\text{vintage}}}{S_{t-1}^{\text{vintage}}}$$

Furthermore, in order to assess the contributions of different instruments to the revision of M3, the growth rates of M3 components are also rescaled by multiplying them by the ratio of $S_{t-1}^{\text{vintage}}$ to the stock of total M3 in the same period. It should be noted that the M3 stock series used to adjust the growth rates ($S_{t-1}^{\text{M3}}$) is the one corresponding to the vintage of October 2009. Expressed as a formula:

$$adjg = \frac{F_t^{\text{vintage}}}{S_{t-1}^{\text{vintage}}} \cdot \frac{S_{t-1}^{\text{vintage}}}{S_{t-1}^{\text{M3}}} = \frac{F_t^{\text{vintage}}}{S_{t-1}^{\text{M3}}}$$

As an indicator of the magnitude of revisions, the average of the absolute revisions is calculated at each lag (with N reflecting the number of revisions considered):

$$\text{Absolute mean} = \frac{1}{N} \sum_{x=1}^{n} |\text{Revision}|_x$$

Furthermore, in order to detect whether revisions to first releases suffer from a bias, the average

of the differences between the observation value at a certain time lag and the first release is calculated as:

$$\text{Simple mean} = \frac{1}{N} \sum_{x=1}^{n} \text{Revision}_x$$

In the text, revisions are expressed in percentage points, while in the charts they are expressed in hundredths of percentage points, i.e. a revision of 10 equals a revision of the monthly growth rate of 0.1 percentage point (p.p.). These units were chosen because the vast majority of all revisions of M3 growth are smaller than 0.1 p.p. The revision analysis is therefore carried out at a higher level of precision than for other variables published by the ECB. Furthermore, the revision analysis focuses on month-on-month changes instead of annual changes, in order to better identify the timing of a given revision.[14]

## 2.3 REVISIONS OF EURO AREA MONETARY AGGREGATES

Revisions to the broad monetary aggregate M3 for the euro area are very small. Chart 1 shows the *revisions to the month-on-month growth rates of M3* at different lags.

One month after the first release, 32 out of the 51 reported revisions (63%) are within the range of +0.05 to -0.05 p.p., compared with ten revisions in total in the ranges -0.10 to -0.06 and 0.06 to 0.10 p.p., and nine revisions exceeding +/- 0.10 p.p. After three months, 30 out of 49 revisions (61%) are within the narrow range of -0.05 to +0.05 p.p., with 11 revisions in the ranges of -0.10 to -0.06 and 0.06 to 0.10 p.p., and the remaining eight amounting to more

---

12 Before June 2005, only the most recent vintage of data was saved in the SDW.
13 While seasonal adjustment factors applied by the ECB are revised when the need arises (usually at annual intervals), and can thus also retroactively alter monetary data, mixing the effect of updating seasonal adjustment factors with the effects of genuine revisions to the raw data would be misleading. This analysis therefore concentrates on the revisions to non-seasonally adjusted data.
14 A revision occurring in a given month may affect two monthly changes and 13 annual changes. Of course, the latter are affected to a lesser extent.

x-axis: hundredths of a percentage point
y-axis: number of occurrences

- t+1
- t+3
- t+6
- t+12
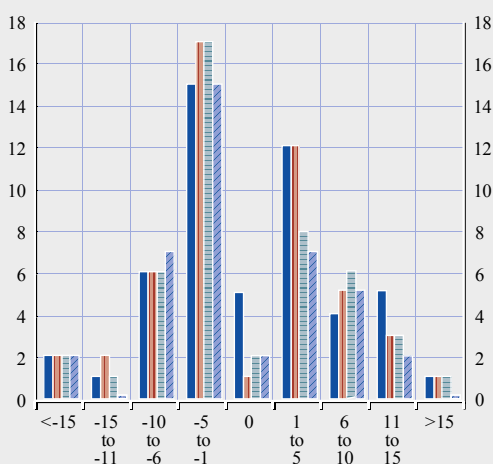


Source: ECB.

x-axis: hundredths of a percentage point
y-axis: number of occurrences

- t+1
- t+3
- t+6
- t+12
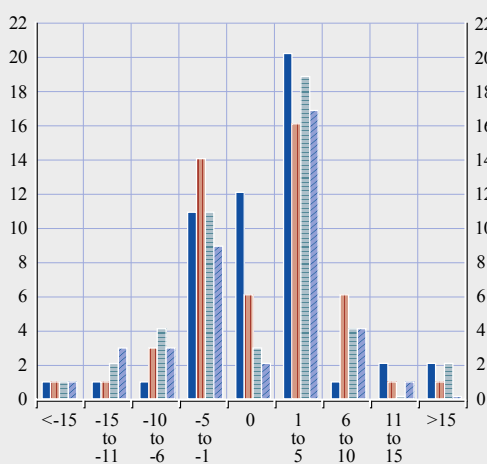


Source: ECB.

than 0.10 p.p. in absolute terms. At lag $t+6$, there are 27 revisions in the narrowest band (59%), compared with 24 revisions (60%) at lag $t+12$. Overall, while there are some differences among the various lags, around 60% of all revisions are less than or equal to 0.05 p.p. After an initial revision has taken place, which usually happens within the first three months after the initial release, there are usually no significant further revisions in the subsequent periods.

To date, the most significant revisions to M3 period-on-period growth rates were for the months March 2008, May 2008 and December 2008: the first was revised by -0.31 p.p. at lag $t+3$, the second by -0.22 p.p. at lag $t+1$, and the third by 0.25 p.p. at lag $t+1$.

The absolute mean of revisions to the M3 growth rate (see Annex 1, Table 1) is close to 0.06 p.p. for all lags, and close to last year's results. The bias (simple mean) of the early estimates for the M3 period-on-period growth rates varies between 0.001 for lag $t+1$ to -0.010 p.p.

for $t+12$. Compared with the average monthly growth rate of M3 (0.60%),[15] the average revisions and bias have remained at very low levels.

Chart 2 presents the same information for *revisions of M2*. Revisions are even more concentrated within the range of -0.05 to +0.05 p.p.: 43 out of 51 (84%) at lag $t+1$, 36 out of 49 at $t+3$ (73%), 33 out of 46 at lag $t+6$ (72%), and 28 out of 40 at lag $t+12$ (70%).

Examining the occurrence of exceptional revisions over different lags reveals that the few revisions of this size occurred at lag $t+1$ (-0.21 p.p. for the reference period July 2008 and +0.18 p.p. for the reference period December 2008).

15 The average monthly growth rate being calculated as

$$avgg = \left( \sqrt[52]{\frac{Stock_{Oct.\ 09}}{Stock_{June\ 05}}} - 1 \right) \cdot 100$$

The average absolute revisions of the month-on-month growth rate of M2 varied between 0.035 p.p. ($t+1$) and 0.049 p.p. ($t+6$). This is not much higher than last year, when all lags ranged between 0.033 p.p. and 0.044 p.p. The bias of the initial M2 growth rates is slightly higher than in the 2008 analysis, in this case ranging between -0.004 and 0.010 p.p. across all lags. All in all, revisions to M2 monthly growth rates have been marginal. The average monthly growth rate of M2 in the period of the revision analysis was 0.64%.

Chart 3 presents the *revisions of M1*. 75% of all revisions to the M1 period-by-period growth rate at lag $t+1$ are between -0.05 and +0.05 p.p., compared with 61%, 57% and 50% at lags $t+3$, $t+6$ and $t+12$ respectively.

The number of revisions exceeding 0.15 p.p. in absolute terms is larger for M1 than for M2 or M3. Contrary to the broader aggregates, exceptional revisions for M1 can also be found for the longer lags: twice for lag $t+12$ (referring

to June 2006 and April 2007, revised by -0.21 p.p. and 0.18 p.p. respectively) and once for lag $t+6$ (referring to August 2007, revised by -0.22 p.p.). At lag $t+3$, exceptional revisions occurred twice (referring to October 2007 and December 2007, revised by -0.16 p.p. and -0.18 p.p. respectively), compared with five times for lag $t+1$ (June 2005 revised by 0.44 p.p., November 2005 by -0.16 p.p., January 2008 by 0.24 p.p., July 2008 by -0.35 p.p. and December 2009 by 0.16 p.p.).

The absolute mean of the revisions to the month-on-month growth rate of M1 was slightly higher than in last year's analysis for the longer lags, but slightly lower for the shorter lags (between 0.050 p.p. at $t+1$ and 0.083 p.p. at $t+12$). The bias was between -0.005 and 0.008 p.p. for all lags. In addition, these average revisions are small by comparison with the average month-on-month growth rate of M1, which was 0.57%.

Most of the revisions are sufficiently small to not be visible in the monthly growth rates for the monetary aggregates, which are published at a precision of one decimal: at lag $t+1$: 61% of all M3 period-on-period growth rates have remained unchanged and more than 55% are unrevised compared with the initial release when including revisions up to lag $t+3$. Furthermore, if M3 period-on-period growth rates were to be revised, only in exceptional cases would the revision be more than 0.1 p.p. The same applies to M1 (75% of published M1 period-on-period growth rates were unchanged at $t+1$, and more than 60% were not visibly revised at lag $t+3$) and especially to M2 (84% unrevised at lag $t+1$, 71% unrevised at lag $t+3$).

## 2.4 REVISIONS OF COMPONENTS OF EURO AREA MONETARY AGGREGATES

Revisions to the components of the monetary aggregates are shown below, including information on their development over time. In order to keep the presentation concise, only lag $t+3$ is shown. This is also because revisions closer to the first data release affect the monetary analysis more than revisions occurring at lag $t+6$ or later.

**Chart 3 Revisions to month-on-month growth rates of euro area M1**

x-axis: hundredths of a percentage point
y-axis: number of occurrences

- t+1
- t+3
- t+6
- t+12
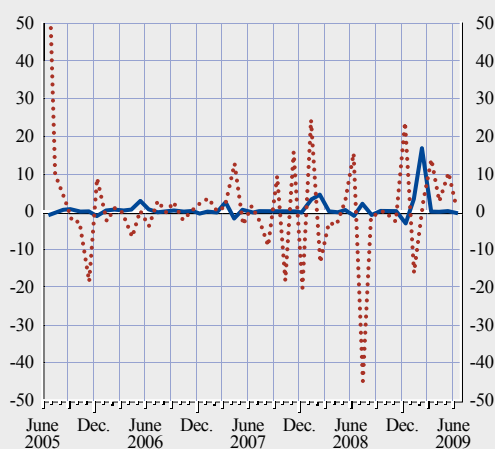


Source: ECB.
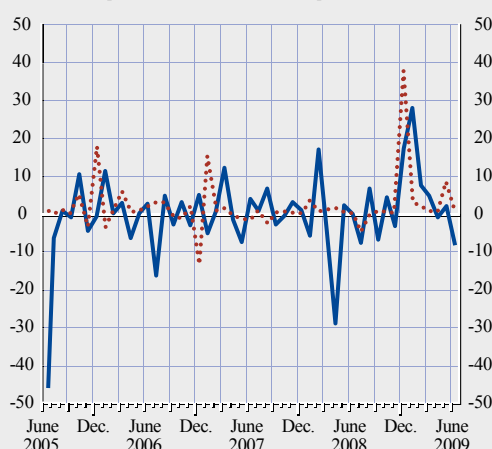
Source: ECB.

Source: ECB.

The revisions to month-on-month growth rates for *currency in circulation* are almost always close to zero, except for one bigger revision in February 2009. Chart 4 shows that revisions to *overnight deposits* were in a rather narrow range during a long period of time, with an exceptional revision of 0.48 p.p. for the reference period June 2005 caused by a change in the accounting regime of one country. A change in the pattern can be observed as from around August 2007. Afterwards, the revisions in overnight deposits move in a corridor of +/- 0.25 p.p., except for the reference period July 2008 (-0.45 p.p.) as a result of exceptional revisions in two euro area countries.

Chart 5 shows the revisions of the month-on-month growth rates for the components of M2-M1. In the case of *deposits with an agreed maturity of up to two years*, a large revision occurred for the reference period June 2005 owing to the change in accounting regime mentioned above. Further exceptional revisions occurred for April 2008 and January 2009. The latter revision is partly the result of a number of institutions joining the MFI sector in December 2008 in one country,

institutions which started reporting for the first time for reference period January 2009.

*Deposits redeemable at a period of notice of up to three months* are comparatively less revised, although revisions exceeded 0.01 p.p. on four occasions. Of these, the revision to reference period December 2008 was exceptionally strong, owing to a change of reporting scheme in one country.
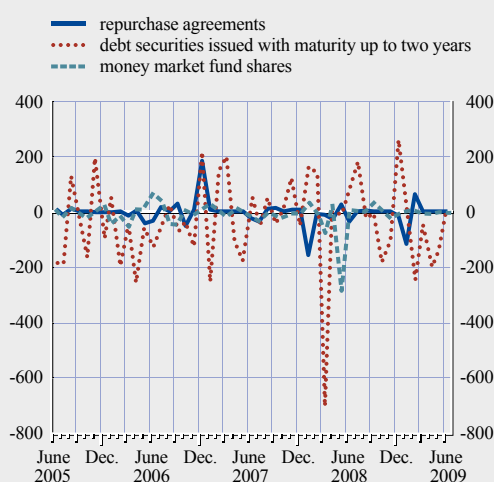
Chart 6 shows that the month-on-month growth rates of the components of M3-M2 continued to be revised much more than those of the components shown earlier.[16] Of the three series, *repurchase agreements* are typically the least revised, except for three remarkably high revisions, of 1.84 p.p., -1.56 p.p. and -1.15 p.p. for December 2006, January 2008 and January 2009 respectively. The revisions of the growth rates of *money market fund shares/units* show large downward adjustments for the reference months March 2008 (-0.73 p.p.) and May 2008

---

16  It should be noted that the scale of Chart 6 is different from that of Charts 4 and 5.

exceptional revision occurred for reference month March 2008, which was revised by -7.23 p.p. These revisions have to be seen in the context of rather large flow movements and relatively small outstanding amounts in the underlying series. This leads to highly volatile month-on-month growth rates.
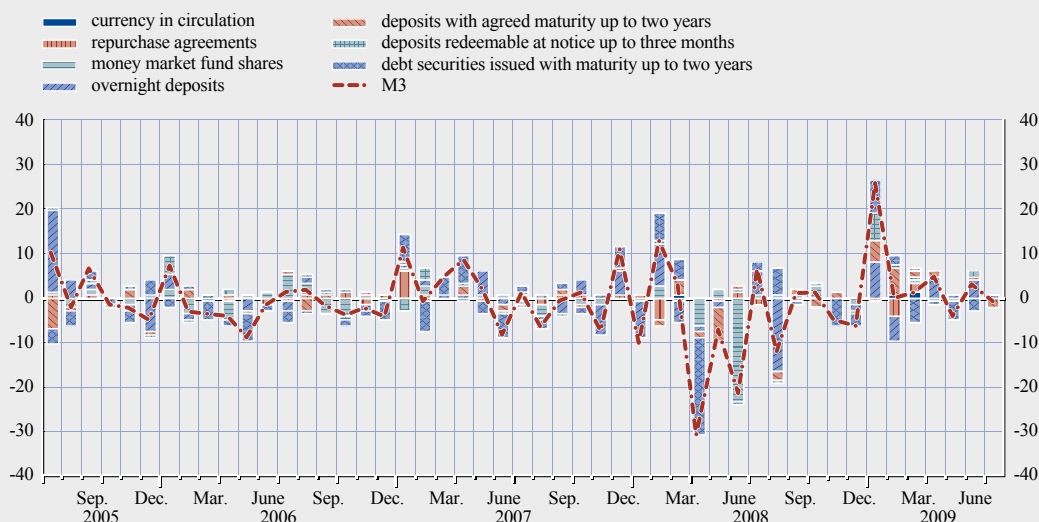
## 2.5 CONTRIBUTIONS TO M3 REVISIONS

In order to assess the contributions of individual instruments to the revisions of M3, the share of each instrument in the aggregate needs to be taken into account. Chart 7 shows that the largest contributions to the overall M3 revisions stem from revisions to debt securities issued and to overnight deposits. In earlier periods, revisions to money market fund shares/units were also an important driver of M3 revisions on a regular basis, but their relative importance declined in late 2006 and has generally remained lower, although they did show some strong movements in the first half of 2008. Moreover, contributions from individual instruments have been less pronounced recently than in the period from summer 2007 to end-2008.

(-2.83 p.p.). The growth rates of *debt securities issued* are often revised by more than one p.p.; in around one-third of the cases the revisions actually amount to more than 1.5 p.p. One very

## Bias (simple means) and revision averages (absolute means) in euro area monetary statistics

(hundre☐
of the respective instrument; June 2005 to October 2009)

| Revisions at: | t+1 | t+3 | t+6 | t+12 |
|---|---|---|---|---|
| **Currency in circulation** | | | | |
| Simple mean | 0.39 | 0.57 | 0.57 | 0.19 |
| Absolute mean | 0.63 | 1.04 | 1.16 | 0.82 |
| **Overnight deposits** | | | | |
| Simple mean | 0.89 | 0.65 | -0.31 | -0.57 |
| Absolute mean | 5.97 | 8.25 | 9.43 | 9.93 |
| **M1** | | | | |
| Simple mean | 0.81 | 0.64 | -0.17 | -0.45 |
| Absolute mean | 5.03 | 6.93 | 7.78 | 8.33 |
| **Deposits with agreed maturity up to two years** | | | | |
| Simple mean | -0.03 | -0.27 | -0.29 | -1.92 |
| Absolute mean | 6.21 | 6.72 | 7.81 | 9.20 |
| **Deposits redeemable at notice up to three months** | | | | |
| Simple mean | 2.09 | 1.74 | 1.76 | 1.37 |
| Absolute mean | 2.79 | 3.18 | 3.38 | 2.94 |
| **M2** | | | | |
| Simple mean | 0.96 | 0.72 | 0.26 | -0.37 |
| Absolute mean | 3.49 | 4.36 | 4.88 | 4.83 |
| **Repurchase agreements** | | | | |
| Simple mean | 2.68 | -3.36 | -0.63 | 1.87 |
| Absolute mean | 19.39 | 20.57 | 27.12 | 24.95 |
| **Money market fund shares/units** | | | | |
| Simple mean | -7.49 | -7.69 | -7.74 | -9.17 |
| Absolute mean | 20.82 | 22.30 | 24.63 | 26.31 |
| **Debt securities with maturity up to two years** | | | | |
| Simple mean | -11.54 | -40.05 | -28.15 | -33.03 |
| Absolute mean | 116.88 | 125.29 | 133.58 | 151.69 |
| **M3** | | | | |
| Simple mean | 0.14 | -1.01 | -0.96 | -1.70 |
| Absolute mean | 5.47 | 6.06 | 6.40 | 5.65 |

Cells marked green (grey) indicate a decline (increase) [in absolute value] of 1.0 or more compared with the absolute value from the analysis in the previous year.