EURO AREA QUARTERLY FINANCIAL ACCOUNTS 2013 QUALITY REPORT

APRIL 2014

EUROPEAN CENTRAL BANK

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EURO AREA QUARTERLY
FINANCIAL ACCOUNTS 2013
QUALITY REPORT

APRIL 2014
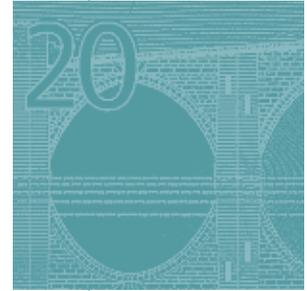
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EXECUTIVE SUMMARY

This annual quality report is required by Article 7 of the ECB Guideline on reporting requirements in the field of quarterly financial accounts (hereinafter referred to as "the Guideline").[1] It follows the basic principles of the ECB Statistics Quality Framework (SQF)[2] and includes a quantitative analysis of revisions and national accounting consistency.

The integration of the quarterly financial accounts with the quarterly non-financial sector accounts in the euro area accounts allows an exhaustive analysis of all sectors of the euro area economy. In particular, no alternative comprehensive and timely data sources exist for the household and non-financial corporation sectors. The ECB publishes the complete euro area accounts and a core set of commonly available national quarterly financial accounts data, uses the euro area accounts for detailed internal briefings, publishes a press release on euro area accounts, and describes financial and non-financial developments as observed in the euro area accounts in a regular "box" in its Monthly Bulletin.

The recent financial crisis has greatly increased the analytical interest among users in these data, and in particular in national data.[3] The work to support financial stability and macro-prudential analysis for individual Member States has resulted in the inclusion of financial accounts data in the "Risk Dashboard" of the European Systemic Risk Board (ESRB)[4]. The main statistical indicators for the ESRB are based on quarterly financial accounts; namely, comprehensive debt measures for households and non-financial corporations (NFCs). Furthermore, similar demands are part of the Macroeconomic Imbalance Procedure (MIP) scoreboard. Currently three of the 11 MIP scoreboard headline indicators and two of the 12 ESRB Risk Dashboard indicators are based on financial accounts data (see Annex 1). Moreover, the G20 Data Gaps Initiative (in particular, Recommendation 15), the G20 Mutual Assessment Process (MAP) and the SDDS Plus data requirements of the IMF draw on financial and non-financial sector accounts.

Since there is **no formal revision policy yet in place for the euro area, the magnitude and frequency of the revisions** to euro area financial accounts are implicitly determined by national revision practices, which vary quite considerably from country to country. However, the size of euro area revisions has decreased in comparison to previous years. The largest relative revisions occur for the financial asset/liability category other accounts receivable/payable and, in sectoral terms, for data on non-monetary financial intermediaries other than insurance corporations and pension funds (OFIs).

The euro area financial accounts are internally consistent. This consistency is achieved after integrating all input data following an agreed compilation strategy. Moreover, **the euro area financial accounts as part of the integrated euro area accounts** are fully consistent with the non-financial sector accounts (so-called "vertical consistency") for the sectors financial corporations, general government and the rest of the world. For the sectors non-financial corporations and

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1 Guideline of the ECB of 21 November 2002 on the statistical reporting requirements of the ECB in the field of quarterly financial accounts (ECB/2002/7). OJ L 334, 11.12.2002, p. 24. This Guideline was subsequently amended in November 2005 to improve both timeliness and coverage: Guideline of the ECB of 17 November 2005 amending Guideline ECB/2002/7 on the statistical reporting requirements of the ECB in the field of quarterly financial accounts (ECB/2005/13). OJ L 30, 2.2.2006, p. 1. A further amendment was made with respect to the derogations granted to the Banque centrale du Luxembourg: Guideline of the ECB of 20 April 2006 amending Guideline ECB/2002/7 on the statistical reporting requirements of the ECB in the field of quarterly financial accounts (ECB/2006/6), OJ L 115, 28.4.2006, p. 46.
2 http://www.ecb.europa.eu/pub/pdf/other/ecbstatisticsqualityframework200804en.pdf.
3 Although not part of the MUFA Guideline, it is worth mentioning that the euro area accounts balance sheets have been significantly enhanced with the inclusion of (produced) non-financial assets and housing wealth estimates.
4 http://www.esrb.europa.eu/pub/rd/html/index.en.html.

households, statistical discrepancies between the non-financial and financial accounts still exist. The size of the required balancing adjustments applied by the ECB to national or euro area input data has increased compared to the previous years.

The Governing Council adopted in 2013 a **recast of the Guideline**[5] aimed at greater timeliness, increased detail at the sectoral, instrument and flow level and full adherence to the requirements emanating from the new ESA 2010 methodological framework. Furthermore, the Guideline also provides the basis for the publication of a complete set of quarterly financial accounts for all euro area countries by the ECB. Implementation of the new Guideline is scheduled from September 2014.

1 INTRODUCTION

QUARTERLY FINANCIAL ACCOUNTS AS PART OF THE EURO AREA ACCOUNTS

The ECB has compiled quarterly integrated financial and non-financial accounts by institutional sector (euro area accounts) in cooperation with Eurostat since mid-2007. These data are published by the ECB in Tables 3.1 to 3.5 of the Euro Area Statistics section of the ECB's Monthly Bulletin and in Section 6 of its Statistics Pocket Book. Moreover, a regular press release describing economic and financial developments for the euro area with a breakdown by institutional sector is issued 120 days after the end of the reference quarter and all data are made available in the ECB's Statistical Data Warehouse (SDW). Since October 2011, a comprehensive set of dedicated national and euro area tables have also been published in the "Reports" section of the SDW.

Integrated accounts contribute to the ECB's assessment of risks to price stability and have enhanced not only the monetary analysis, but also economic and financial stability analysis. This includes monitoring the relationships between financial investment, capital formation, savings and financing, movements of financial wealth, asset prices and indebtedness and their impact on consumption, savings and output. Furthermore, counterpart sector ("from whom-to-whom") information show who is financing whom by deposits and loans. In particular, data on counterpart sectors and residency of the sectors granting loans to households and to non-financial corporations have become a priority for analysts.

STRUCTURE OF THIS REPORT

The institutional and legal framework is briefly reviewed in Section 2 of this report. Section 3 explains the quality monitoring procedures, presents the latest developments in the quality of the euro area financial accounts in terms of coverage, reliability (revision analysis), consistency and accessibility. Section 4 outlines planned improvements in 2014. Finally, Section 5 concludes and provides a concise summary of future challenges to be considered for the amendment of the Guideline on financial accounts.

2 INSTITUTIONAL AND LEGAL FRAMEWORK

2.1 INSTITUTIONAL FRAMEWORK FOR COMPILING EURO AREA FINANCIAL ACCOUNTS

The compilation of euro area financial accounts (MUFAs) is based on four main statistical data sources that jointly determine the overall quality of the statistics. These sources are: (i) the quarterly

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5 Guideline of the European Central Bank of 25 July 2013 on the statistical reporting requirements of the European Central Bank in the field of quarterly financial accounts (recast) (ECB/2013/24), OJ L 2, 7.1.2014, p. 34.

national financial accounts (financial balance sheets and transactions) provided by members of the ECB's Working Group on Euro Area Accounts (WG EAA) under the ECB Guideline; (ii) the MFI balance sheet statistics (BSI); (iii) the quarterly financial accounts for general government (QFAGG); and, (iv) the quarterly euro area balance of payments (b.o.p.) and international investment position (i.i.p.).

Among the input data, this report mainly focuses on the national financial accounts regularly transmitted by the members of the WG EAA under the Guideline. This data set covers time series on financial transactions and financial balance sheets for institutional sectors broken down by financial instrument, original maturity and debtor/creditor, as specified in the Guideline. Although separate annual quality reports for the other euro area statistics are also available, the integrated nature of the euro area financial accounts could eventually also require references to these other data sources in this report.

2.2 LEGAL FRAMEWORK

The requirement for this Quality Report on quarterly euro area financial accounts derives from Article 7 of the Guideline, which states:

"1. The ECB and the NCBs shall monitor and promote the quality of the data reported to the ECB.

2. The Executive Board of the ECB shall report yearly to the Governing Council of the ECB on the quality of the quarterly euro area financial accounts.

3. The report shall address, at least, the coverage of the data, the extent to which they comply with the relevant definitions, and the magnitude and frequency of revisions."

In line with paragraph 1 of Article 7, the ECB and the NCBs monitor the compliance and the quality of the data reported to the ECB on a regular, quarterly basis. Quarterly individual country reports and euro area quarterly Integration and Transmission reports form the basis of this.

In line with paragraphs 2 and 3 of Article 7, this Quality Report evaluates the coverage, the timeliness and the magnitude of revisions to the data for the various sectors and financial instruments. In addition, this report also covers the coherence of the aggregated country contributions as a main determinant of the overall quality of the euro area financial accounts.

3 QUALITY OF THE EURO AREA FINANCIAL ACCOUNTS

3.1 QUALITY ASSURANCE PROCEDURES AND USER INVOLVEMENT

The transmissions of quarterly national financial accounts data are regularly checked for completeness and internal consistency, as well as for external consistency with related statistics (e.g. non-financial sector accounts, MFI balance sheet statistics, investment funds statistics, government finance statistics and balance of payments statistics). The results of the consistency checks are compared with the metadata information regularly transmitted by the countries. The metadata transmissions, also governed by the Guideline, cover revisions and major events, but also, on a voluntary basis, major "other changes in volume" (e.g. changes in classification/structure) and balancing adjustments. The metadata constitute a valuable instrument for understanding major data developments and taking appropriate compilation decisions. The transmission of other changes

in volume, facilitating the analysis of changes in financial balance-sheets due to asset price changes, will become mandatory with the Guideline recast as of September 2014.

As part of the MUFA quality monitoring framework, quarterly country reports are drafted by the ECB and sent for comment to the NCBs, usually within two days following the data transmissions. This quick feedback procedure facilitates the understanding of data developments and the timely detection of transmission errors. The ECB then prepares summary/aggregate reports of the quarterly MUFA transmissions, the Transmission Report, focusing on the euro-area-wide impact of the individual country assessments made in the "country reports",[6] in particular in terms of coverage, consistency and revisions. The **Transmission Reports** are discussed at least yearly in the WG EAA. The quarterly reports are the basis for the identification of persistent quality issues and the formulation of country specific recommendations.

The regular compilation of the euro area accounts, which combine the national financial accounts contributions and other euro area statistics, as well as the integration of the financial and the non-financial accounts, is documented in the quarterly **Integration Report**. The Integration Report is prepared by the ECB and circulated to internal users, the WG EAA and the Task Force on Quarterly Sector Accounts (TF QSA) to discuss integration issues both at the euro area and at national levels. As a result of these discussions, potential data or metadata improvements are agreed by the WG EAA.

3.2 COVERAGE

The Guideline requires the transmission of quarterly data for the total economy broken down by institutional sector, combined with a detailed breakdown by financial instrument. Back data, in most cases starting from the first quarter of 1999, have to be provided as well.[7]

The members of the Eurosystem complied with the current data requirements of the Guideline in 2013; however, one country still does not provide the required data for the period from 1999 to 2004.

3.3 REVISION ANALYSIS: RELIABILITY OF THE QUARTERLY EURO AREA FINANCIAL ACCOUNTS

Since there is no formal revisions policy yet in place for the euro area, the magnitude and frequency of the revisions to euro area financial accounts are mainly determined by the revision practices of the national data sets, which vary from country to country. Furthermore, revisions to the euro area building blocks used in the compilation of the accounts, in particular the b.o.p. and i.i.p., also have a significant impact on the magnitude and frequency of updates to the euro area financial accounts.

The euro area financial accounts currently have an open revision practice, i.e. the full time series (starting with the first quarter of 1999) may be revised by the ECB at any publication date to reflect updated source data. This is due to the large number of data sources and the fact that the financial accounts data of some euro area countries are still subject to methodological and/or data

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6 The country reports incorporate the principles of the IMF Data Quality Assessment Framework (DQAF) that serves as general guidance for a quality assessment of the data transmitted. Elements pertaining to the various quality dimensions that determine "reliable statistical data" – accuracy, reliability and serviceability – are covered: coverage and timeliness, revisions, plausibility and internal and external consistency.

7 For "new" participating Member States which were not members of the EU in 1999, back data shall be transmitted from the first quarter of the year in which they acceded to the EU.

source changes that may affect the entire time series. The euro area accounts will benefit from a common revision practice currently under development in the framework of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) that aims at harmonising balance of payments and national accounts revisions practices.

This Quality Report presents a quantitative revision analysis of the quarterly financial accounts for the fourth time. Revisions are defined as the difference between the first and the most recent value for a given quarter.[8] The presented measures are similar to the quantitative indicators used for other euro area statistics (in particular, the b.o.p. and i.i.p.) and have been chosen to fit the requirements of financial accounts. As the financial accounts data are generally analysed in terms of changes in stocks due to transactions, this analysis pays particular attention to revisions to transactions relative to the magnitude of the underlying stocks.

Frequent and/or sizeable revisions raise questions on the reliability of the statistics concerned. Therefore, analysing revisions provides the basis for conclusions on the reliability of the data, which is acknowledged in the Guideline, as Article 2(6) establishes an obligation on NCBs to report the reasons for revisions above a certain threshold. However, it should be noted that changes in past data are not necessarily an indicator of (in-)accuracy. Indeed, revisions may also be due to changes in the statistical treatment of specific operations and methodological decisions concerning accounting rules or even euro area enlargements. Furthermore, revisions due to improvements in the methodology and processes used in the compilation of the data may lead to an increase in the accuracy of the national MUFA data.

Table 1 below presents the following measures:[9]

(1) Positive revisions (%): percentage of positive revisions to transactions; this measure indicates whether first estimates tend to be revised upwards (if above 50%), or downwards. In principle, positive and negative revisions should occur with roughly the same frequency. If the revisions are systematically positive, this may point to under-coverage in early estimates, which needs to be corrected somehow.

(2) Q directional reliability indicator: percentage of first assessments that provided the same sign for the change in a transaction as the most recent assessment; this indicator measures the degree to which the first estimate correctly signalled an increase or decrease in the transaction.

(3) Bias (%): bias component between early and later assessments (based on the root mean square relative error (RMSRE)); this indicator measures systematic difference between first and latest estimates of transactions.

(4) MACE: the mean absolute comparative error expresses the mean absolute revision of transactions as a percentage of the corresponding stocks; this indicator is a measure of volatility of revisions to transactions, normalised by referencing it to the level of the underlying stock series.

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8 For example, values for the first quarter of 2013 were first transmitted in July 2013 and the most recent transmission was in October 2013; in this case, the revision is compiled as the difference in the values transmitted in these two transmissions. This compilation method is valid for all reference quarters under review.
9 For the mathematical definitions of these indicators see Annex 2.

These quantitative indicators have been computed on the basis of the quarterly observations from the third quarter of 2010 to the second quarter of 2013 (12 observations), as released in successive data vintages up to October 2013. The MACE measures for that period are compared with those for the three-year period up to the second quarter of 2012 (the previous quality review period).

Table 1 Revision indicators: Q3 2010 to Q2 2013 (MACE compared with Q3 2009 Q2 2012)

Sector	ASSETS memo: EUR bn stocks	Positive rev. (%)	Q	Bias (%)	MACE[1]	LIABILITIES Bias (%)	Q	Positive rev. (%)	memo: EUR bn stocks
Gold and SDRs (F1)									
Euro area	485	17	100	21	↔ 0				
MFIs	485	17	100	21	↔ 0				
Currency and deposits (F2)									
Euro area	23,501	50	100	28	↓ 0 0 ↓	18	100	50	24,173
Households	7,082	33	100	2	↓ 0				
NFCs	2,034	67	83	39	↔ 0.5 ||||| 0 ↓	24	100	42	33
MFIs	10,398	58	100	20	↓ 0.1	0 ↓	9	100	50	23,837
OFIs and FAs	2,403	25	100	0	↓ 0.4 |||| ||| 0.3 ↔	0	100	58	33
ICPFs	813	33	100	16	↓ 0.1					
Government	771	33	100	6	↓ 0.8 |||||||| |||| 0.4 ↓	16	92	58	271
RoW	3,315	42	100	2	↔ 0.1	||| 0.3 ↓	13	92	42	2,643
Securities other than shares except financial derivatives (F33)									
Euro area	15,804	50	100	10	↓ 0.1	0 ↓	14	100	58	17,139
Households	1,267	50	75	8	↓ 0.8 |||||||				
NFCs	312	17	83	10	↓ 2.6 |||||||||||||||||||||| || 0.2 ↓	14	92	42	1,071
MFIs	7,203	42	92	3	↔ 0.1	0 ↓	6	100	42	5,223
OFIs and FAs	3,454	33	75	4	↓ 0.4 |||| || 0.2 ↔	38*	92	67	3,235
ICPFs	3,096	42	100	8	↓ 0.3 ||| |||||| 0.7 ↓	3	100	17	303
Government	473	25	92	7	↓ 1.2 |||||||||| 0 ↓	2	100	25	7,554
RoW	4,889	25	83	8	↓ 0.3 ||| || 0.2 ↓	7	92	25	3,554
Loans (F4)									
Euro area	21,982	50	100		↓ 0.1		0.1 ↓	0	100	33	21,098
Households	84	33	92	8	↓ 0.4 |||| 0 ↓				
NFCs	3,077	17	50	18	↓ 0.6 |||||	0.1 ↓	5	75	33	8,388
MFIs	13,225	42	100		↓ 0				
OFIs and FAs	4,280	50	83	12	↓ 0.4 |||| |||| 0.4 ↓	9	92	50	4,000
ICPFs	489	33	83	0	↓ 0.3 ||| |||||||||||| 1.4 ↓	0	92	33	303
Government	828	58	100	15	↑ 1 |||||||||| |||| 0.4 ↓	0	100	50	2,247
RoW	2,476	58	83	34	↓ 0.7 |||||| ||||| 0.5 ↓	39*	92	67	3,361
Shares and other equity (F5)									
Euro area	26,155	58	83	33*	↓ 0.2 || || 0.2 ↓	34	92	50	26,568
Households	4,615	58	92	33	↓ 0.1	0 ↔		100	17	6,160
NFCs	8,326	58	75	5	↓ 0.2 ||	0.1 ↔	5	75	42	13,785
MFIs	1,885	50	67	2	↓ 0.5 ||||| || 0.2 ↓	5	92	33	2,621
OFIs and FAs	7,001	50	92	42	↓ 0.5 ||||| |||| 0.4 ↓	41	92	58	9,661
ICPFs	2,786	50	75	6	↓ 0.3 |||	0.1 ↓	16	75	50	489
Government	1,543	33	92	11	↓ 0.2 || |||| 0.4 ↓	22	67	42	4
RoW	6,897	67	75	42	↓ 0.6 |||||| ||||| 0.5 ↓	44	92	67	6,484
Insurance technical reserves (F6)									
Euro area	6,773	25	83	11	↔ 0.1		0.1 ↔	0	92	25	7,032
Households	6,338	25	100	12	↔ 0.1		0.1 ↔		67	67	36
NFCs	184	50	83	4	↓ 0.6 ||||| || 0.2 ↔		58	50	350
MFIs	3	8	92	43*	↓ 0.7 |||||| |||||||| 0.9 ↓	26	75	8	64
OFIs and FAs	0	42	75	6	↓ 7.1 |||||||||||||||||||||||||||||||||||||| || 0.2 ↓	2	83	17	1
ICPFs	244	42	92	2	↓ 0.5 |||||	0.1 ↔	1	92	33	6,580
Government	4	8	75	51	↓ 0.3 ||| |||||| 0.7 ↓	33	67	17	1
RoW	259	58	75	20	↓ 1.1 |||||||||				

Table I Revision indicators: Q3 2010 to Q2 2013 (MACE compared with Q3 2009 Q2 2012) (cont'd)

		ASSETS					LIABILITIES			
Sector	memo: EUR bn stocks	Positive rev.(%)	Q	Bias (%)	MACE[1]		Bias (%)	Q	Positive rev. (%)	memo: EUR bn stocks
					Other accounts (F7)					
Euro area	6,417	25	92	2	↓ 0.8 |||||||| |||||||| 0.8 ↓		2	100	25	6,325
Households	521	42	83	0	↓ 3.1 |||||||||||||||||||||||| ||||||||||||||| 1.7 ↓		13	67	42	650
NFC's	3,647	50	67	4	↓ 0.6 |||||| |||| 0.4 ↓		9	100	58	3,521
MFIs	895	25	92	10	↓ 1.4 |||||||||||| |||||||||||| 1.5 ↓		11	83	17	1,071
OFIs and FAs	398	58	100	29	↓ 1.3 |||||||||||| |||||||||||||||||||||||||||||||||||||||| 4.8 ↓		1	83	42	241
ICPFs	157	33	75	0	↓ 1.4 |||||||||||| |||||||||||||||||||||||||||||| 3.7 ↓		0	83	33	208
Government	799	33	58	10	↑ 3.1 |||||||||||||||||||||| |||||||||||||||||||||||| 2.7 ↓		30	83	25	634
RoW	599	50	100	11	↓ 0.8 |||||||| |||||||| 1 ↓		10	83	33	691

1) Increase (↑), equal (↔) and decrease (↓) in the indicator as compared to its value one year earlier.
* Zero bias rejected at 95% confidence level.

The scale of revisions has generally decreased in comparison to previous years. In comparison two the three-year period ending in the second quarter of 2012, one can observe 74 decreases in the **MACE indicator** for sector/instrument combinations and only two increases (16 remained broadly unchanged). Revisions to transactions in all the instruments for the euro area as a whole (total economy) have been quite low, amounting to between 0.0% and 0.8% of the corresponding outstanding amounts (stock). Revisions by institutional sector were larger, although the bulk of the sector/instrument combinations were still below the 2% threshold. Moreover, in some cases, the large relative revisions should be seen in the context of very low stocks, as, for example, in the case of insurance technical reserves for MFIs, OFIs and general government. Furthermore, the **directional reliability (Q)** of financial accounts was rather high, with over 90% of the series showing a Q equal to or above 75%.

Revisions for deposits (F2) declined in relative terms for the euro area as a whole as well as for all sectors. Revisions for the deposit liabilities of MFIs and OFIs declined and they also declined for all holding sectors.

Revisions for debt securities (F33) remained relatively large for the holdings of NFCs, although they have decreased in recent years. The high revisions are partly due to the fact that the NFC sector is often the residual sector used to attain the equality of security holdings and issues ("horizontal consistency"). Some countries improved their national compilation practices but this may even lead initially to higher revisions.

Revisions for loans (F4) declined or remained unchanged in both sides of the balance sheet for all sectors except for loans granted by government. This was mainly due to upward revision of loans granted by central governments to local governments.

Revisions in shares and other equity (F5) were relatively small and tended to diminish further. The bias component was statistically different from zero for the euro area on the asset side as revisions tended to be upwards.

Revisions in insurance technical reserves (F6) generally decreased. The bias component was statistically different from zero in the case of MFI assets, and revisions remained high (in relative

terms) for OFI assets. However, such assets deriving from non-life insurance contracts represent a very small part of the financial assets of MFIs and OFIs.

Other accounts receivable/payable (F7) were again, in relative terms, the most revised of all financial instruments. Revisions decreased for all sectors except government, for which they increased. In particular large revisions were observed for both receivables and payables of MFIs and OFIs, which were related to the changes in the treatment of large, often not further specified, other remaining assets and liabilities in the balance sheets of financial sub-sectors.

3.4 CONSISTENCY AND COMPARABILITY OF FINANCIAL ACCOUNTS

3.4.1 INTERNAL CONSISTENCY: HORIZONTAL CONSISTENCY BY FINANCIAL INSTRUMENT

The euro area financial accounts are internally consistent. Internal consistency refers to the national accounting identities and to hierarchical relationships.[10] This includes horizontal consistency, which is defined as the equality between the sum of (transactions in) financial assets and the sum of (transactions in) liabilities for all financial instruments (e.g. the sum of quoted shares issued by the resident sectors and the rest of the world equals the sum of quoted shares purchased by the resident sectors and the rest of the world). **The individual national financial accounts data sets as transmitted to the ECB are internally consistent.**[11] However, the euro area accounts are not the simple aggregation of the national data, as they need to be combined with other euro area statistics (in particular, euro area b.o.p./i.i.p. and MFI balance sheet statistics) to obtain genuine euro area accounts. Horizontal consistency is not generally maintained when all these ingredients are put together, due to discrepancies across data sources. Resulting imbalances between assets and liabilities for each transaction are then resolved by keeping data from the most reliable sources unchanged and amending those from less reliable sources, where needed.

Table 2a below shows the euro area horizontal imbalances resulting from the combination of the various data sources, i.e. before the balancing process. The imbalances are measured by the root mean standard error (RMSE) for the observations from the third quarter of 2010 to the second quarter of 2013 (12 observations), as released up to October 2013. The RMSE is compared with the previous three-year periods.

The *a priori* horizontal imbalances (before data sources are reconciled) in the financial accounts continued to be significant and there are two underlying reasons: b.o.p./i.i.p. asymmetries[12] and differences between national financial accounts data and euro area building blocks. The latter occur mostly because national financial accounts compilers may adjust the statistics underlying the euro area building blocks or use different data sources. For example, loans granted by MFIs to general government as recorded in the financial accounts may differ from data in MFI balance sheet statistics because financial accounts compilers take the values from government finance statistics

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10 Internal consistency covers the following four sub-elements:
  - Aggregation consistency: e.g. total economy (transmitted sector total) = sum of sectors (sub-sectors).
  - Horizontal consistency: assets, sum of relevant sectors = liabilities, sum of relevant sectors.
  - Balancing item consistency: transmitted net lending /net borrowing calculated from the financial accounts (B.9F) and net financial worth (BF.90) = assets, sum of relevant instruments – liabilities, sum of relevant instruments.
  - Counterpart sector consistency: totals (as reported in Tables 1-2) = sum of relevant counterpart sectors as reported in Tables 3-5.
11 Discrepancies of less than €10 million are considered acceptable in the national data. Internal discrepancies of more than €10 million have been observed for a few countries but this was generally corrected in later transmissions.
12 In order to compile appropriate euro area rest-of-the-world accounts, cross-border transactions and positions between euro area member countries have to be converted into domestic ones, e.g. loans between NFCs of two euro area member countries are recorded as loans between NFCs rather than loans to and from the rest of the world. However, in the national accounts of the euro area countries, the bilateral transactions and positions do not always mirror each other. These so-called "asymmetries" have been eliminated in order to obtain a consistent set of euro area accounts,

Table 2a Internal consistency of input data by financial instruments

Financial instrument	Horizontal imbalances RMSE (EUR bn) broken down into bias component ■ and variance component ■ [1]			memo: 4-quarter cumulated transactions (EUR bn)
	Q3 2010 to Q2 2013Q2	Q3 2009Q to Q2 2012	Q3 2008 to Q2 2011	
Gold and SDRs (F1)	0 ↓	2.8 ↑	2.6 ↑	0
Currency and deposits (F2)	24.3 ↑	17.5 ↓	22.2 ↓	-42
Debt securities (F33)	41.9 ↓*	45.3 ↑	43.9 ↑	105
Loans (F4)	38.3 ↑	35.8 ↓	38 ↑	-35
Shares and other equity (F5)	44.8 ↑	38.3 ↓	41.1 ↓	-146
Insurance technical reserves (F6)	0 ↔	0 ↔	0 ↔	0
Other accounts (F7)	34.3 ↓	43.4 ↓	46.6 ↓	97

1) Increase (↑), equal (↔) and decrease (↓) in the indicator as compared to its value one year ago.
* Zero bias rejected at 95% confidence level.

which are assumed to have a higher-quality counterpart sector assignment (by contrast reporting MFIs may sometimes misclassify borderline entities such as local utilities).[13] The inconsistencies decreased for transactions over the last reference period for gold and SDR, deposits, debt securities and other accounts receivable/payable. They increased for loans and shares and other equity.

3.4.2 CONSISTENCY WITH NON-FINANCIAL SECTOR ACCOUNTS: VERTICAL CONSISTENCY

The Eurosystem, in co-operation with the European Statistical System (ESS), produces integrated financial accounts and non-financial accounts, which are published as the quarterly euro area accounts. Full coverage of instruments allows for the compilation of certain balancing items, such as net lending/net borrowing (from the non-financial accounts) and net financial assets (or "net lending/net borrowing as derived from the financial accounts"), and enhances the **"vertical reconciliation"** (equal balances for financial transaction accounts and non-financial accounts) within euro area institutional sectors and with regard to the rest of the world. Currently, the euro area accounts comprise fully vertically integrated data for the sectors financial corporations, general government and the rest of the world, while, for the sectors non-financial corporations and households, statistical discrepancies between the non-financial and financial accounts still exist.

Vertical imbalances arise as different data sources are used for the compilation of the non-financial accounts and the financial accounts. Some countries have established policies to eliminate the discrepancies, e.g. by adjusting financial and/or non-financial items for which the data sources are considered incomplete or of poor quality; while others do not make such "reconciliation" adjustments in order to preserve the information from the respective data sources.

Table 2b below shows the (*a priori*) vertical imbalances resulting from the comparison of the simple sum of national data sources, i.e. before the integration of euro area building blocks data and before balancing performed by the ECB. The vertical imbalances are defined as the difference between the respective net lending/net borrowing from the non-financial accounts and from the financial accounts.

Vertical inconsistency by institutional sector has increased for all sectors, including the rest of the world. The discrepancy for the rest of the world is closely related to the "net errors and omissions"

13 For an overview of the national data sources see "Handbook on quarterly financial accounts for the euro area", Chapter 3: http://www.ecb.europa.eu/stats/acc/html/index.en.html

Table 2b Vertical consistency by sector (financial accounts versus non-financial accounts)				
	Vertical imbalances, RMSE (EUR bn)			*memo: 4- quarter cumulated transactions*
Sector/Account	**Q3 2010 to Q2 2013**	**Q3 2009 to Q2 2012**	**Q3 2008 to Q2 2011**	*(EUR bn)*
Euro area	73.8 ↑	68.8 ↑	55.1 ↑	21
Households	39.7 ↑	27.6 ↑	29.8 ↓	−8
NFCs	43.6 ↑	41.5 ↓	47 ↑	119
Financial corporations	54.3 ↑	53.9 ↑	45 ↓	−87
Government	18.5 ↑	11.6 ↔	11.6 ↑	−2
RoW	73.8 ↑	68.8 ↑	55.1 ↑	−21

1) Increase (↑), equal (↔) and decrease (↓) in the indicator as compared to its value one year ago.

stemming from the balance of payments (b.o.p). The discrepancies for the resident sectors are also affected by the "net errors and omissions" as countries generally adhere to the b.o.p data and thus have to offset these discrepancies in the financial and/or non-financial sector accounts.

For households, the differences between the financial accounts and the non-financial accounts have increased. Some countries have decided to reconcile this sector fully, e.g. by adjusting financial and/or non-financial items for which the data sources are considered incomplete or of relatively low quality; other countries do not make such "reconciliation" adjustments in order to preserve the information from the respective data sources. In some countries vertical discrepancies tend to offset each other over time, while they have shown a persistent trend in others.

For non-financial corporations, the discrepancies are larger, also because this sector is generally not reconciled. In some countries this sector has been chosen to offset the "net errors and omissions" stemming from the b.o.p.

For financial corporations the data availability is typically better than for the non-financial sectors and some countries achieve full consistency. The discrepancies have, however, increased and became even larger than for non-financial corporations. The imbalances do not fully cancel out across sectors, leading to sizeable average quarterly vertical imbalances for the euro area as a whole.

3.5 ACCESSIBILITY OF EURO AREA AND NATIONAL QUARTERLY FINANCIAL ACCOUNTS DATA

The integrated euro area accounts and the available national quarterly financial accounts data were published by the ECB on 29 January (reference quarter: third quarter of 2012, time lag: t+122), 29 April (fourth quarter of 2012, t+119), 30 July (first quarter of 2013, t+121) and 29 October 2013 (second quarter of 2013, t+121).

The national quarterly financial accounts data disseminated by the ECB comprise the assets and liabilities (Tables 1 and 2 of the Guideline) without counterpart sector detail. The dissemination policy agreed by the Statistics Committee foresees that this common core set of financial accounts data is made available for publication. Since 2011 a set of national tables have been published in the "Reports" section of the SDW, however some countries have not made all instrument and/or sector breakdowns available for publication.

4   DEVELOPMENTS IN 2014: THE NEW GUIDELINE AND THE ESA 2010

The Governing Council adopted in July 2013 a thoroughly amended new Guideline to come into effect in September 2014.[14] The Guideline was prepared in close cooperation with the Monetary Policy Committee, the main user of the financial accounts data among the ESCB Committees. The Guideline also covers the implementation of the new national accounts standards as defined in the recently adopted EU Regulation on national accounts (the ESA 2010).[15]

The new Guideline entails the following enhancements in financial accounts data availability:

(i)   improved timeliness (85 working days; 82 days as of 2017) in country input data for the compilation of euro area accounts, which would make it possible to advance the compilation of financial accounts for the euro area from the current 120 days after the end of the reference quarter to 90 days after the end of the reference quarter;

(ii)   greater timeliness in the complete set of national financial accounts, from the current 110 days after the end of the reference quarter to 100 days after the end of the reference quarter (97 days as of 2017); and

(iii) availability of further breakdowns of institutional sectors (especially for the non-MFI financial sectors) and assets and liabilities, information on other changes in volume facilitating the analysis of variations in financial balance sheets due to asset price changes; and, as of September 2015:

(iv)   counterpart sector detail for securities.

The improvement in timeliness for the euro area will be the major challenge as financial accounts rely on the integration of source statistics that only become available at t+85 (quarterly financial accounts for general government) and the quarterly euro area b.o.p. and i.i.p.). The plan is for a step-by-step improvement in the timeliness of the euro area accounts following the first transmission under the new Guideline in September 2014, so that by October 2015 the euro area accounts will generally be released between about 90-95 days after the reference quarter.

5   CONCLUSION

The overall quality of the euro area financial accounts has improved in 2013. The size of revisions generally decreased. The *a prio*ri ("horizontal") inconsistencies resulting from the combination of the various data sources improved for most financial instruments. However, the ("vertical") discrepancies between the financial accounts and the non-financial sector accounts are significant and further increased for all sectors.

For 2014, the highest priority will be to implement the changeover to the new Guideline with the foreseen improvements, the public availability of national financial accounts data and increased detail at sector, instrument and flow level, and in adherence to the requirements emanating from the new ESA 2010 methodological framework.

14 Guideline of the European Central Bank of 25 July 2013 on the statistical reporting requirements of the European Central Bank in the field of quarterly financial accounts (recast) (ECB/2013/24), OJ L 2, 7.1.2014, p. 34.
15 Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union, OJ L 174, 26.6.2013, p. 1.

ANNEXES

I USE OF FINANCIAL ACCOUNTS-BASED INDICATORS FOR MACRO-PRUDENTIAL, MACROECONOMIC IMBALANCE AND FINANCIAL STABILITY ANALYSIS

Table	
Publication	**Indicators based on financial accounts**
MIP scoreboard	Private sector credit flow Private sector debt Financial sector liabilities
ECB Financial Stability Review	Household debt-to-gross disposable income ratio Household debt-to-total financial assets ratio Corporate debt-to-GDP and leverage ratio
ESRB dashboard	Household debt-to-gross disposable income ratio Non-financial corporation debt-to-GDP ratio
G-20 MAP	Private debt

2 MATHEMATICAL DEFINITIONS OF THE QUALITY INDICATORS USED:

(1) Revisions *(R)* with a positive sign as a percentage of observations (*N*), with *R* and *N* referring to transactions:

$$\text{positive revisions (\%)} = 100 \times \frac{\text{count }(R_{ij} > 0)}{N}$$

(2) Directional reliability indicator (*Q*)

To assess whether the information on the direction of changes (i.e. whether a transaction increases or decreases) as contained in the earlier assessment has not been systematically altered by the revisions, a *2 x 2* contingency table can be drawn up. In this contingency table, the columns consist of positive and negative first differences of the earlier assessment $\Delta x_t^i = x_t^i - x_{t-1}^i$, while the rows consist of positive and negative changes of the latest assessment. $\Delta x_t^j = x_t^j - x_{t-1}^j$

Contingency table for directional reliability

Contingency table for directional reliability			
	$\Delta x_{t_1} > 0$	$\Delta x_{t_1} \leq 0$	**Subtotal**
$\Delta x_{t_k} > 0$	n_{11}	n_{12}	$n_{11} + n_{12}$
$\Delta x_{t_k} \leq 0$	n_{21}	n_{22}	$n_{21} + n_{22}$
Subtotal	$n_{11} + n_{21}$	$n_{12} + n_{22}$	N

The directional reliability indicator is then derived as follows:

$$Q = \frac{n_{11} + n_{22}}{N}$$

(3) Bias component of the root mean square relative error (RMSRE): If a time series is stationary, tested, for example, with the Dickey-Fuller unit root test [Dickey, D. A. *et al* (1979)] without drift and without trend and using the critical values in MacKinnon, J (1991) at the 5% confidence level, then the mean ($\overline{X^j}$) can be seen as a good measure of location for the time series. The stationarity allows the development of an indicator with the possibility of breaking it down into a bias, a regression and a random component. This indicator is calculated as the square root of the ratio between the average of the square revisions (from vintages *i* and *j*) and the variance of the series (X_j). It is called the root mean square relative error (RMSRE):

$$RMSRE = \sqrt{\frac{\sum_{t=1}^{N} (x_t^j - x_t^i)^2}{\sum_{t=1}^{N} (x_t^j - \overline{X^j})^2}}$$

The value of the RMSRE is 0 when the earlier assessment *i* always equals the latest assessment *j*, 1 if the earlier assessment *i* is only as accurate as the reference *forecast*, which is the time series average provided that it is a stationary time series, and greater than 1 when the earlier assessment

i is less accurate than such a reference forecast of the series. The square of the RMSRE can be broken down as follows:

RMSRE^2 = (1) Bias component + (2) Regression component + (3) Random component

$$RMSRE^2 = MSRE = \left[\frac{\overline{X^j} - \overline{X^i}}{S_{x^j}}\right]^2 + \left[r_{x^i x^j} - \frac{S_{x^i}}{S_{x^j}}\right]^2 + \left[1 - (r_{x^i x^j})^2\right]$$

where $r_{x^i x^j}$ is the linear correlation between the two series, S_{x^i} and S_{x^j} are the standard deviations and $\overline{X^i}$ and $\overline{X^j}$ the means of x_t^i and x_t^j, respectively. These three components can also be presented as proportions of the RMSRE, in which case they will add to 1.

(4) Mean absolute comparative error (MACE): In the case of financial transactions, for instance net acquisition (purchases minus sales) of mutual fund shares, revisions cannot be properly related to the series value itself because transactions may have different signs and, even more importantly, their values may often be close to zero. Therefore, the revisions to the transactions are related to the corresponding end period outstanding amounts (denoted by $P(x)_t^j$) for assessing the relative size of the revisions. An average of the absolute value of the revisions of the transactions scaled by the outstanding amounts can be taken across periods, resulting in the indicator called mean absolute comparative error (MACE):

$$MACE = \frac{1}{N} \sum_{t=1}^{N} \left| \frac{x_t^j - x_t^i}{P(x)_t^j} \right|.$$