EUROPEAN CENTRAL BANK

EUROSYSTEM

EURO AREA BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION STATISTICS

MARCH 2012

2011 QUALITY REPORT

EUROPEAN CENTRAL BANK

EUROSYSTEM

EURO AREA BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION STATISTICS

MARCH 2012

In 2012 all ECB publications feature a motif taken from the €50 banknote.

2011 QUALITY REPORT

Address
Kaiserstrasse 29
60311 Frankfurt am Main
Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main
Germany

Telephone
+49 69 1344 0

Website
http://www.ecb.europa.eu

Fax
+49 69 1344 6000

ISSN 1830-3420 (print)
ISSN 1830-3439 (online)

CONTENTS

EXECUTIVE SUMMARY

This annual quality report is required by Article 6 of Guideline ECB/2004/15.[1] It follows the basic principles of the "Public commitment on European Statistics by the ESCB",[2] which was published in 2007 and amended in 2009 and includes quantitative indicators.

In March 2011 the ECB started publishing the balance of payments (b.o.p.) for the enlarged euro area, i.e. including Estonia, which joined the euro area on 1 January 2011. Consistent time series for the b.o.p. and international investment position (i.i.p.) of the enlarged euro area since January 1999, as well as the historical euro area b.o.p. and i.i.p. time series, can be downloaded from the ECB's Statistical Data Warehouse (SDW).[3]

In 2011 various Member States implemented enhancements that improved the methodological soundness, the coverage and the consistency of their contributions, which triggered some revisions to the euro area statistics. In particular, the changes to the collection system applied in Italy had an impact on previous years' positions and flows.

The reliability of the current account has improved in the last three years (2008-10) as a consequence of a clear trend towards more reliable data on income and services. In addition, the current account shows that 90% of the time the first assessments correctly predicted an increase or decrease of the final value in comparison with the previous observation.

The direct investment flows and stocks still show the highest revisions of the financial account; however, the reliability of the first estimates has improved in the last years. The relative revisions to the portfolio investment assets and liabilities have decreased moderately in the last three-year period, thus reversing in particular the increasing trend in the revisions to portfolio investment assets since the period 2003-05. The main reason for this reversing trend towards more reliable data is the general consolidation of and experience already gained with the collection and compilation of portfolio investment data on a security-by-security basis, which have been in place in all euro area countries since 2009.

Revisions to the net euro area i.i.p. at end-2010 increased the net liability position from €1,183 billion to €1,215 billion (0.2% of the average stock of assets and liabilities), with revisions to other investment (revised downwards by €137 billion) which were partially compensated for by revisions to combined portfolio and direct investment (revised upwards by €90 billion). The cumulated revisions to the net euro area i.i.p. at end-2009 include one more vintage, and the result from the first assessment is a decrease of the net liability position from €1,467 billion to €1,395 billion (0.5% of the average stock of assets and liabilities). This revision is mainly due to upward revisions of €299 billion to combined portfolio and direct investment, which were partially compensated for by downward revisions to other investment by €275 billion.

The consistency between b.o.p. and monetary statistics has deteriorated for the first time since 2007 for net deposits and loans. This deterioration has occurred after the implementation of the new ECB Regulation concerning the balance sheet of the monetary financial institutions sector[4] in June 2010. In addition, during 2010 and 2011 the amount of flows recorded under the b.o.p. item other assets and other liabilities increased significantly; this has been identified as a source of discrepancies as the BSI statistics do not separate geographically this type of assets and liabilities. Furthermore, the consistency for securities assets is stable, but still far from optimal, and the bias component is relevant since euro area

1 See Official Journal of the European Union (OJ), L 354, 30.11.2004, p. 34, and amending Guideline ECB/2007/3, OJ L 159, 20.6.2007, p. 48.
2 Available on the ECB's website at http://www.ecb.europa.eu/stats/html/pcstats.en.html.
3 See http://sdw.ecb.europa.eu.
4 Regulation (EC) No 25/2009 of the European Central Bank of 19 December 2008 concerning the balance sheet of the monetary financial institutions sector (ECB/2008/32), OJ L 15/14, 20.1.2009.

portfolio investment is compiled based on security-by-security holdings (2007).

In 2011 the consistency between b.o.p./i.i.p. data and euro area accounts (EAA) deteriorated slightly for flows and more markedly for stocks. The discrepancies reveal that the existing differences are mainly due to compilation practices. Indeed, the decisions on eliminating asymmetries, on allocating net errors and omissions and on eliminating the breaks in the series prevent the euro area accounts from being fully consistent with the underlying b.o.p. and i.i.p. data.

The ECB regularly compares the euro area data with the closely corresponding data released by its main counterparts, namely the United Kingdom, the United States and Japan. Whereas the asymmetries between the euro area b.o.p. and those of the two latter countries seem to be limited, the asymmetries between the euro area b.o.p. and that of the United Kingdom have increased, in particular with respect to euro area exports of services to the United Kingdom and, lately, income (for both credits and debits).

In 2010 the euro area data show exports of services to the United Kingdom (€103.9 billion) that are almost double those recorded in the United Kingdom as imports from the euro area (€68.3 billion), while the discrepancies with respect to net income increased significantly from -€1 billion in 2008 to €21.6 billion in 2010 (see Annex 3 for more detailed figures). For 2009 and 2010 the flows recorded by the euro area – excluding euro area imports of goods – largely exceed the mirror flows recorded by the United Kingdom for all the current account items, both credits and debits.

The implementation of the sixth edition of the IMF's Balance of Payments Manual (BPM6), which was published in 2009, will take place in a coordinated way at the European level; the first aggregated b.o.p. and i.i.p. statistics following the BPM6, for the euro area and for the EU, will be published in November 2014 (see Box 1).

INTRODUCTION

This report is required by Article 6 of Guideline ECB/2004/15.[5] It follows the statistical principles of the "Public commitment on European Statistics by the ESCB",[6] which was published in 2007 and amended in 2009. In line with its Mission Statement, the ECB has committed itself to adhering to values such as integrity, competence, efficiency and transparency. Moreover, the ECB published its Statistics Quality Framework (SQF) and quality assurance procedures in April 2008.[7] These contain the main principles and elements guiding the production of ECB statistics.

This report is organised into three sections. Section 1 focuses on the institutional environment in which statistics are produced. It covers the following aspects: (i) independence; (ii) the legal mandate for data collection; (iii) impartiality and objectivity; and (iv) statistical confidentiality. Section 2 concentrates on the statistical processes, the relevant aspects of which are: (i) a sound methodology and appropriate statistical procedures; (ii) cost-effectiveness; and (iii) minimisation of the reporting burden. Finally, Section 3 deals with the quality of the statistical output, namely its: (i) relevance; (ii) accuracy and reliability (including stability); (iii) consistency (or coherence) and comparability; (iv) timeliness (including punctuality); and (v) accessibility and clarity.

The report includes quantitative indicators[8] for measuring reliability (or stability) and consistency. These quantitative indicators were computed on the basis of the monthly b.o.p. observations from January 2008 to December 2010 (36 observations), as released up to 28 October 2011. The results for that period are compared with those for the four previous three-year periods, i.e. from 2004 in the main text and from 1999 in Annex 2. By contrast, the study of the euro area i.i.p. revisions is based on the different vintages of the estimates for each year. The analysis of the i.i.p. revisions focuses on the data for positions from end-2005 to end-2010, as published on 28 October 2011.

1 INSTITUTIONAL ENVIRONMENT

The institutional environment has a direct impact on the quality of statistics. The statutory *independence* and accountability of the ECB, based on the provisions of the Treaty on the Functioning of the European Union (the "Treaty"),[9] also apply to its statistical tasks. The euro area b.o.p. and i.i.p. are based on the aggregation of statistics provided by individual euro area countries on transactions and positions between their residents and non-euro area residents. The *legal framework for collecting b.o.p./i.i.p. data* stems from the Treaty, in particular Article 5 of the Protocol on the Statute of the European System of Central Banks and of the European Central Bank (the "ESCB Statute"), which deals with the collection of statistical information.[10] In application of this provision, Article 2 of the Council Regulation (EC) No 951/2009 amending Council Regulation (EC) No 2533/98 on the collection of statistical information by the ECB[11] defines the reference reporting population, including "legal and natural persons residing in a Member State, to the extent that they hold cross-border positions or have carried out cross-border transactions […]".

The legal obligation set out in the Treaty and Council Regulation (EC) No 951/2009 amending Council Regulation (EC) No 2533/98 form the basis for Guideline ECB/2004/15 and for the amending Guideline ECB/2007/3 on the statistical reporting requirements of the ECB in the field of

5 See OJ L 354, 30.11.2004, p. 34, and amending Guideline ECB/2007/3, OJ L 159, 20.6.2007, p. 48.
6 Available on the ECB's website at http://www.ecb.europa.eu/stats/html/pcstats.en.html
7 Available on the ECB's website at http://www.ecb.europa.eu/stats/html/sqf.en.html
8 Based on the work of a joint ECB (Directorate General Statistics)/European Commission (Eurostat) Task Force on Quality, in which representatives of most of the then 15 EU Member States were also involved. The Task Force report is available on the website of the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB) at www.cmfb.org
9 For further details, see the ECB's website at http://www.ecb.europa.eu/ecb/orga/governance/html/index.en.html
10 Article 5.1 sets out that "in order to undertake the tasks of the ESCB, the ECB, assisted by the national central banks, shall collect the necessary statistical information either from the competent national authorities or directly from economic agents".
11 OJ L 269, 14.10.2009, p. 1, and OJ L 318, 27.11.1998, p. 8.

balance of payments (b.o.p.) and international investment position (i.i.p.) statistics, and the international reserves template. The Memorandum of Understanding of March 2003 between the ECB's Directorate General Statistics and Eurostat defines how responsibility in the field of b.o.p./i.i.p. statistics is shared between the European Commission and the ECB.[12]

The International Monetary Fund (IMF) has established a Special Data Dissemination Standard (SDDS) to guide its member countries in the provision of their economic and financial data to the public. All euro area countries have subscribed to the standard. The euro area as a whole also adheres to the SDDS. References to the IMF's SDDS framework are made in this report where appropriate.

Since the start of Stage Three of Economic and Monetary Union (EMU) in 1999, several measures have been implemented to protect the integrity and credibility of euro area statistics and to increase the efficiency and effectiveness of statistical procedures. First, the ECB has procedures in place to protect *statistical confidentiality*, as required in Council Regulation (EC) No 951/2009. Second, the Statistics Committee (STC) of the European System of Central Banks (ESCB) and the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB)[13] have assisted the ECB's Directorate General Statistics and the European Commission (Eurostat) in developing the data quality framework.

The main purpose of euro area b.o.p. and i.i.p. statistics is to support the monetary policy of the ECB and other tasks of the Eurosystem[14] and the ESCB. In the Eurosystem's Mission Statement, accountability, transparency and good governance are important values which underpin the integrity of the statistical function as defined by the Treaty (Article 5 of the ESCB Statute).

2 STATISTICAL PROCESSES

2.1 METHODOLOGICAL SOUNDNESS

The ECB's website contains an up-to-date methodological note on the compilation of the euro area b.o.p. and i.i.p. and international reserve assets, including, among other things, the legal framework, the compilation method, euro area definitions and the basis of valuation as well as revision practices.[15]

In order to meet specific user requirements, the agreed methodology for compiling the euro area aggregates is set out in the IMF's Balance of Payments Manual (BPM5). Moreover, the ECB and Eurostat are together coordinating the necessary steps for the adoption of the sixth edition of the manual (BPM6)[16] by 2014 (see Box 1 on the next page). The methods for compiling the statistics on the international reserves (flows and outstanding amounts) of the ECB and the Eurosystem are described in a separate document.[17]

12 The Memorandum of Understanding, dated 10 March 2003, is available on the ECB's website at http://www.ecb.europa.eu/ecb/legal/pdf/en_mou_with_eurostat1.pdf
13 http://www.cmfb.org
14 The Eurosystem is the central banking system of the euro area. It comprises the ECB and the national central banks of the 17 EU Member States that have the euro as their currency.
15 See the ECB's website at https://stats.ecb.europa.eu/stats/download/eas_ch07/eas_ch07/eas_note_ch7.pdf
16 *Balance of Payments and International Investment Position Manual – 6th Edition*, IMF, 2009.
17 *Statistical treatment of the Eurosystem's international reserves*, ECB, October 2000. (Update pending.)

Box 1

TOWARDS THE IMPLEMENTATION OF THE 6TH EDITION OF THE IMF'S BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION MANUAL (BPM6)

The new international standards for balance of payments statistics are defined in the 6th Edition of the Balance of Payments and International Investment Position Manual (BPM6). The changes introduced by that new manual have been translated into new data requirements and integrated in the EU's legal framework (namely Guideline ECB/2011/23[1] and EC amended regulation No 184/2005).

The ECB data requirements are for the most part in line with the standard components presented in the BPM6. The new ECB requirements will include additional breakdowns by institutional sector and instrument, the provision of data for changes in positions related to asset prices and to exchange rates, and further data on portfolio investment positions by remaining maturity in order to enhance the statistics on the euro area external debt.

The first euro area and EU b.o.p. and i.i.p. statistics following the BPM6 will be published in November 2014. Until then, the euro area b.o.p., i.i.p. and international reserves template will be compiled according to Guideline ECB/2004/15 and EC Regulation No 184/2005.

Up to 2014 euro area national central banks will be working in cooperation with national statistical institutes on incorporating the new requirements into the national data collection and compilation systems (e.g. design of new surveys, guidance to the reporters, adaptation of IT infrastructure, etc.).

1 See OJ L65, 3.3.2012, also available on the ECB's website at http://www.ecb.europa.eu/ecb/legal/pdf/l_06520120303en00010044.pdf

In March 2011 the ECB started publishing the b.o.p. for the enlarged euro area, including Estonia, which joined the euro area on 1 January 2011. Consistent time series for the b.o.p. and i.i.p. of the enlarged euro area since January 1999, as well as the historical euro area b.o.p. and i.i.p. time series, can be downloaded from the ECB's Statistical Data Warehouse (SDW).[18]

In 2011 all the euro area countries transmitted on a voluntary basis the details on direct investment allowing the calculation of the gross external debt of the euro area based on member countries' contributions.

Further breakdowns of the euro area b.o.p. and i.i.p. by currency contribute to the ECB's annual review of the international role of the euro.[19] For example, data on cross-border transactions in goods and services of certain euro area countries (Belgium, Germany, Greece, Spain, France, Italy, Cyprus, Luxembourg, Portugal and Slovenia) with countries outside the euro area are broken down by currency on an annual basis; Austria and Ireland as well as Slovakia show transactions only in goods with countries outside the EU and euro area respectively. These data are released on the ECB's website.[20]

Since joining the euro area in 2008, Malta has been complying only partially with the residency definition for those enterprises that are incorporated in the country but have no physical presence there (special-purpose entities – SPEs). Cyprus harmonised its residency definition with the European Community concept on 1 July 2008, including in its statistics the data of SPEs; however, the coverage is still partial and

18 See http://sdw.ecb.europa.eu

19 *The international role of the euro*, ECB, July 2011 (available at http://www.ecb.int/pub/pdf/other/euro-international-role201107en.pdf).

20 See the ECB's website at http://www.ecb.europa.eu/stats/external/balance/shared/files/Exports_imports_IRE_pub2011.pdf

needs to be further improved. A good coverage of SPEs in both countries is foreseen by 2014 at the latest.

In May 2011 Italy published the b.o.p. and i.i.p. statistics following a new data collection and compilation method based on: (i) the collection of data directly from non-financial and financial corporations, including banks, on the assets and liabilities owned by them; and (ii) the ownership of the securities deposited by customers with intermediaries, broken down by the residency of the depositor and the security type. By contrast, the old system was based on reports by banks on payments made for customers to and from abroad. With the new method, the current account of the b.o.p. differs only marginally from the results of the old one, while the impact of this change is more prominent for the financial flows and for the net international investment position.

2.2 COST-EFFECTIVENESS AND MINIMISATION OF THE REPORTING BURDEN

Since 2003 the ECB's Directorate General Statistics and Eurostat have fully aligned their release and revision calendars. This has increased the comparability of their statistics, while also easing the reporting burden of Member States.

The Centralised Securities Database (CSDB) and security-by-security data collection,[21] which have been implemented in all euro area countries as from March 2009, provide extensive flexibility in the compilation of statistics without increasing the burden on respondents.

Since 2009 a network for foreign direct investment statistics (FDI Network) has been working to facilitate a secure exchange of information on large FDI transactions between national compilers of the EU to increase the quality of the statistics produced. The national compilers as well as the euro area aggregates have already benefited from this exchange of information, which has triggered a reduction of asymmetries in the euro area b.o.p. as well as less and/or earlier revisions to these data. The FDI Network is working towards the exchange of information on FDI positions that will start in 2012. 22 Member States have confirmed their participation, after a successful pilot exercise was carried out between three Member States in 2011.

3 HIGH OUTPUT QUALITY

3.1 RELEVANCE OF THE STATISTICAL OUTPUT

The ECB statistics must fulfil stated or implied user needs. These needs may vary over time, as a result of changes in the economic environment. The ECB checks the user needs regularly via the annual work programme and the mid-year review. In addition to new statistics and substantial changes to existing statistical requirements, the user needs are also assessed in terms of their merits and costs.

The geographical breakdown of the holders of euro area portfolio investment liabilities is not currently published by the ECB, as reporting agents in the euro area often cannot identify the current holder of securities that they have issued (i.e. the actual creditor). However, this breakdown is very often requested by users due to its relevance for interpreting recent developments in the euro area. Box 2 describes the results of the estimation made by the ECB based on the IMF Coordinated Portfolio Investment Survey (CPIS).

21 Guideline ECB/2004/15 says that the stocks of securities reported to the national compiler on an aggregate basis, i.e. not using standard (ISIN or similar) codes, should not exceed 15% of the total portfolio investment stocks of assets or liabilities. This threshold should be used as a guide in the assessment of the coverage of Member States' systems.

Box 2

WHO HOLDS EURO AREA PORTFOLIO INVESTMENT LIABILITIES?

The ECB applies the internationally recommended "debtor/creditor" approach for the euro area's b.o.p. and i.i.p. statistics. Thus, assets (holdings of securities) are allocated geographically according to the issuer or borrower (the actual debtor) and not according to the seller of the securities (whether the previous holder or an intermediary). The application of this approach is not difficult, since the holder of securities can usually identify the debtor. In particular for the euro area compilers, the good quality of this allocation is based on the security-by-security compilation systems used by all countries.

In the case of liabilities, the geographical breakdown is more difficult to obtain because reporting agents in the euro area often cannot identify the current holder of securities that they have issued (the actual creditor). In addition, the practice of lodging securities with a custodian in a third country (where neither the holder nor the issuer is resident) complicates the task of identifying non-euro area holders of securities issued by euro area residents.

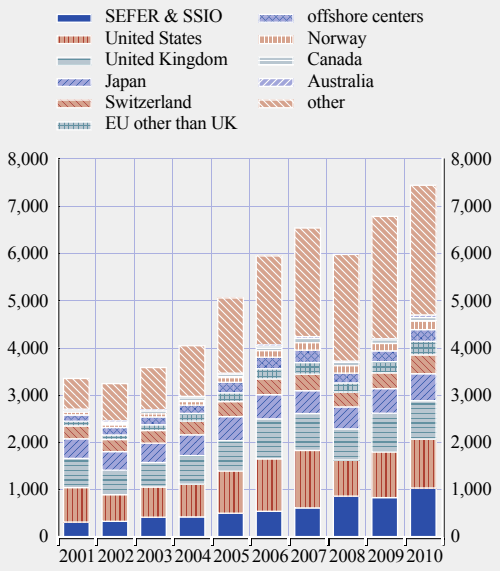
Due to the relevance of the geographical breakdown of the holders of euro area portfolio investment liabilities to interpret recent developments in the euro area, an estimation exercise has been carried out based on the IMF Coordinated Portfolio Investment Survey (CPIS). The CPIS is already used for the quarterly estimations of the geographical breakdown of euro area portfolio investment income debits. These data are available annually since 2001 and some data are also available for 1997. The CPIS provides global information on individual economies' year-end holdings of portfolio investment securities (equity securities and debt securities) valued at market prices, cross-classified by the country of the issuer of the securities. The data are highly comparable, as most of the participants follow definitions and classifications set out in the fifth edition of the IMF Balance of Payments and International Investment Position Manual (BPM5); however, some of the participants may start soon to follow the sixth edition of the manual (BPM6) and this may generate temporarily some heterogeneity in the data reported to the survey.

The countries which participate in the CPIS supply a geographical breakdown of their residents' portfolio claims abroad at end-year, using information provided by the resident asset holders or by resident custodians. All 27 EU Member States contribute to the survey. Their liabilities are reported as claims by counterpart countries. The survey distinguishes between debt securities (long and short-term) and equities held as portfolio investment. Further details are available from the IMF's website (www.imf.org/external/np/sta/pi/cpis.htm).

Although the CPIS is the best source available to estimate the holders' breakdown, it has also some drawbacks that have to be considered in the analysis of the results. First, the CPIS is an annual survey and its timeliness is 12 months after the reference period. In addition, the participation in the CPIS is voluntary and although 75 economies currently participate in the survey, some big financial asset holders such as China or the United Arab Emirates are not yet covered. Furthermore, the CPIS does not cover securities (mostly debt) held by international organisations and held as foreign exchange reserves by monetary authorities. Therefore, the IMF conducts two complementary annual surveys – entitled "Securities held as Foreign Exchange Reserves" (SEFER) and "Survey of Securities held by International Organizations" (SSIO) – to cover the geographical breakdown of this type of holdings; however, these datasets are not disclosed at a detailed level (investor country), as the data are reported on a confidential basis.

Chart A Foreign holders of the euro area portfolio investment liabilities

(EUR billions)



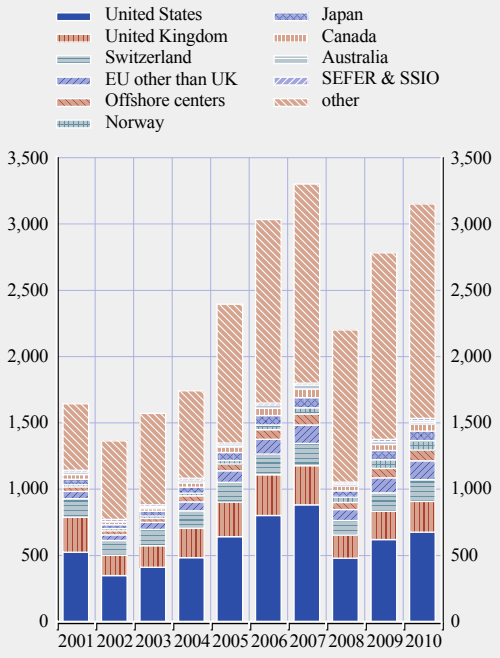
Sources: IMF CPIS, ECB and ECB calculations

Charts A, B and C show the evolution of euro area portfolio investment liabilities by holder from 2001 to 2010. Chart A comprises holdings outside the euro area of both debt securities (Chart C) as well as equity securities, including units/shares of investment funds (Chart B). The SEFER and SSIO include securities held as reserve assets or by international organisations, while "Other" includes (i) the rest of the CPIS reporters not shown individually in the charts which represent 1.5% of euro area portfolio investment liabilities for 2010 and (ii) holdings not reported to the CPIS survey (including SEFER and SSIO).

The United States is still the main holder of euro area portfolio investment liabilities, mainly holding euro area equities (21.5% of the total in 2010; see Chart B). The US holdings increased by one-third from 2001 to 2010; however, the US share of total euro area liabilities declined from 21.7% in 2001 to 13.9% in 2010. This decrease

Chart B Foreign holders of the euro area portfolio investment equities

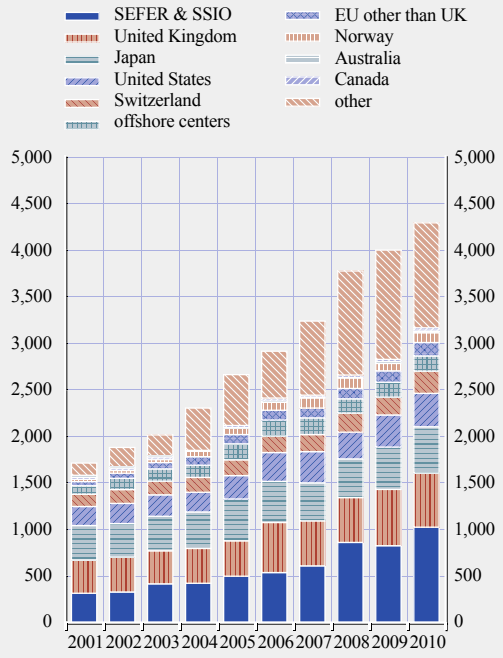
(EUR billions)



Sources: IMF CPIS, ECB and ECB calculations.

Chart C Foreign holders of the euro area debt securities issues

(EUR billions)



Sources: IMF CPIS, ECB and ECB calculations.

in share has been similar for both equity and debt securities. Similar behaviour is observed for the rest of the other main holders of euro area portfolio investment liabilities: the United Kingdom, which is the main holder of debt securities (13.5% of the total in 2010; see Chart C), has reduced the share from 18.5% to 10.9%, Japan from 12.3% to 7.7% and Switzerland from 8.1% to 5.4%. The offshore centres as a group have also reduced their share from 4.4% in 2005 to 3.3% in 2010.

On the other hand, increasing patterns can be seen for the EU countries other than the UK; their share of 2.9% of total portfolio liabilities in 2001 rose to 3.9% in 2010. Norway has also increased its share from 1.1% in 2006 to 2.3% in 2010, as has Australia from 0.5% in 2006 to 0.8% in 2010; these increases are likely to be related to strong growth in the sovereign wealth funds (SWFs) owned by the Norwegian and Australian governments. This phenomenon is also applicable to a certain extent to the holdings of other countries whose governments own SWFs, such as Russia and Chile.

At end-2010 it is not possible to separately identify from the CPIS data the holder's residency of almost 50% of the euro area portfolio investment liabilities. This percentage has grown substantially in the last years, from 30% of the total in 2001 and 40% in 2005.

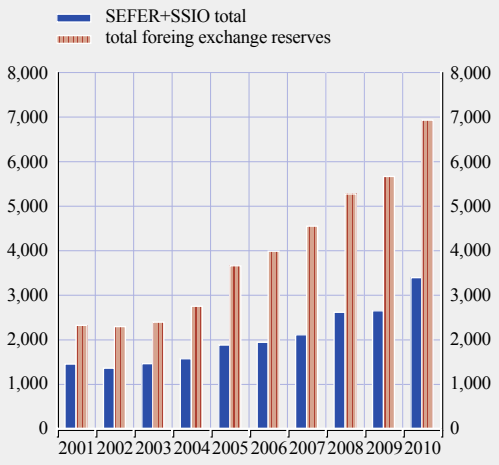
These "unknown" holders are of two different types. The first is related to those securities issued by euro area residents held as reserve assets by other central banks, as well as portfolio investment of international organisations. The IMF publishes the data from the SEFER and SSIO surveys per invested country; however, due to the confidential treatment applied to reserve assets, the geographical location of the holder is not released. At end-2010, 13.9% of euro area portfolio investment liabilities were held as reserve assets or within the portfolios of international organisations. These institutional holders are mainly significant for debt securities where they represent almost one-fourth of euro area debt securities held outside the euro area. The relevance of this type of holders has increased from 2001, when 9.4% was reported to the SEFER and SSIO (around one-fifth of euro area debt securities held outside the euro area).

The second type of "unknown" holders represented at end-2001 20% of euro area portfolio investment liabilities, with this share steadily increasing to 35.4% at end-2010. These unallocated holdings (€1.5 trillion of equity securities and €1.1 trillion of debt securities at end-2011) may primarily be related to holdings of those countries that do not participate in the CPIS and/or SEFER surveys.

For example, China, the United Arab Emirates and Saudi Arabia do not participate in the CPIS survey and the governments of these three countries own SWFs with an estimated value of around €1.5 trillion at the end of 2010. SWFs have significantly increased in size in the last years and may contain an important part of investment in both equity and debt securities abroad.

Chart D Global foreign exchange reserves

(EUR billions)



Sources: IMF COFER, IMF SEFER and ECB calculations.

In addition, the global foreign exchange reserve assets have more than tripled from end-2001 to end-2010, reaching €7 trillion at end-2010 (see Chart D). Of those global reserve assets, only approximately 50% has been covered by the SEFER survey in the last five years. Assuming that the non-reported foreign exchange reserve assets follow a similar distribution by country of issuance to those reported to the SEFER survey, it could be estimated that 30% of the non-reported reserve assets (around €1.1 trillion) are invested in securities issued in the euro area.

Finally, given the importance of monitoring cross-border interconnectedness, the IMF plans to conduct the CPIS survey semi-annually as from 2013. In addition, the IMF is working on increasing participation and enhancing data quality through further improvements in the frequency, timeliness and scope of the CPIS data. This will allow an increase in the frequency of the estimations of the geographical breakdown of the holders of euro area portfolio investment liabilities, as well as an improvement in timeliness and the accuracy of the holders' breakdown.

3.2 ACCURACY AND RELIABILITY (STABILITY) OF THE STATISTICAL OUTPUT

When compiling the euro area aggregates at all frequencies, the ECB performs quality assurance procedures on the contributions received from all euro area countries, and from the ECB itself (derived from its accounting ledgers). The aim of these checks is to detect inaccurate, inconsistent or implausible data. Outliers in time series and inconsistencies with other data sources are analysed as well. If a potential problem is detected, the compiler in the country involved has to check, change or confirm the figures; in the latter case, a further explanation with regard to the underlying economic developments is often supplied.

The ECB publishes its revision practices. The euro area b.o.p. and i.i.p. are revised in line with the following predetermined schedule: quarterly data are revised with the publication of the following quarter's statistics, and twice a year thereafter, namely in April and October; monthly b.o.p. data are revised with the publication of the following month's statistics, as well as with the revisions of the relevant quarter; and the annual i.i.p. is revised with the publication of the same data for the two subsequent years. In addition, extraordinary revisions are justified in the case of major changes in methodology, coverage or data collection systems in the Member States, or when the composition of the euro area changes.

The first release of the monthly b.o.p. for the euro area occurs seven weeks after the end of the reference period and is based on the contributions sent by national compilers four working days earlier. This report also involves a revision analysis to assess the *reliability* (or stability) of the euro area's monthly b.o.p., based on a number of indicators that measure the proximity of these first assessments to the final assessments. Similarly, the i.i.p. revisions are analysed with due consideration of the different vintages resulting from the annual revisions.

Revisions are necessary to improve the data quality as the first assessments may be based, in part, on estimates due to incomplete, late or erroneous responses by reporting agents. Revisions also provide users with more accurate data for time series analysis and forecasting. However, large or systematic revisions may signal weaknesses in the data collection or compilation systems that need to be resolved.

When reviewing the stability indicators, it should be borne in mind that all changes in the underlying data collection or compilation methods, or methodological changes in one or a few Member States, may lead to breaks in, or substantial backward revisions to, the euro area series. At the same time, these changes generally increase the accuracy of the statistics and may be expected to increase the stability of the series over time.

Moreover, it is clear that the quality of the b.o.p. and i.i.p. might be negatively affected by increasing globalisation, which may blur the cross-border character of transactions, especially inside multinational groups, and also by the growing complexity of the phenomena to be measured. The requirement to limit, and sometimes even to reduce, the statistical reporting burden of economic agents could also be a major risk for the accuracy and reliability of the statistics if it is considered to be a greater priority than the actual production of the statistics.

The main results of the stability indicators are presented in the following sub-sections.

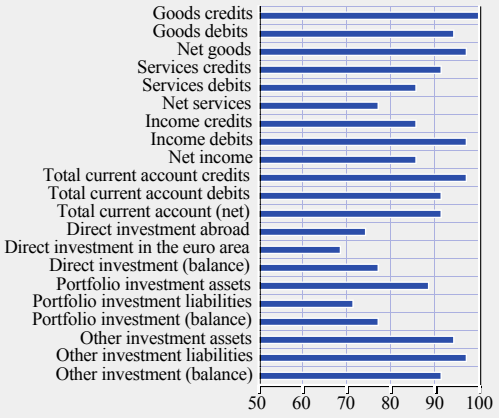
3.2.1 The directional reliability of the first assessment of the monthly current account is higher than 90%, while the directional reliability of the first assessment of direct investment abroad deteriorated to 69%

The directional reliability indicator summarises how often the first assessments correctly predicted an increase or decrease of the final value in comparison with the previous observation. The predictability of the direction of the month-on-month changes constitutes a simple measure of reliability, which is applicable to all b.o.p. items. Chart 1 contains the results of this indicator for the main items of the b.o.p. for the period from 2008 to 2010.

Chart 1 shows the good predictability of the first assessments of the current account, where each component records a directional reliability of the month-on-month changes higher than 77%. In the financial account, the weakest result is for direct investment in the euro area (69%), with a deterioration since the previous three-year period (77% for the period from 2007 to 2009; see the indicator Q in Table 5 in Annex 2 for a longer period analysis). The reliability indicators for portfolio investment assets and liabilities have also deteriorated from the previous period. One reason that may help to interpret the deterioration of this indicator is the reduction in 2010 of both net flows on average and volatility, which make the sign more difficult to predict, but at the same time the size of the estimation error may be lower as the average and absolute average of the revisions indicate (see the indicator R in Table 6 in Annex 2).

Chart 1 Overview of directional reliability

(correctly predicted sign of the month-on-month change in the first estimates as a percentage of all monthly estimates in the period from 2008 to 2010)



Source: ECB.

3.2.2 The mean absolute percentage error continues to show a steady improvement in the stability of the estimates of income

The mean absolute percentage error (MAPE) has been calculated for the gross series of the euro area current account. The MAPE is equal to the average of the absolute revisions in relation to the size of the respective flow. Chart 2 shows the results for five three-year periods: 2004-06, 2005-07, 2006-08, 2007-09 and 2008-10. The results for previous periods back to 1999 are included in Annex 2.

The relative magnitude of the revisions continues to be larger for income, albeit with a clear trend towards more stable income estimates. A stable trend in the magnitude of revisions is observed in both services and goods credits

and debits in the latter three-year periods. As a result of these developments, the stability of the current account credits and debits has improved (see Table 4 and Chart 4 in Annex 2) and the relative magnitudes of the revisions to the current account maintained their downward trend (see Chart 2).

The lower stability for income is mainly due to the difficulty in estimating the profits of affiliates, i.e. the frequent correction of the first estimate of the reinvested earnings sub-item. In general, the stability of income credits and debits has improved since 2008 when new compilation systems for portfolio investment were implemented by the euro area compilers. The initial estimates of income credits and debits for 2010 have been underestimated, as before, as the results from companies' balance sheets were larger than the initial estimates in particular on the assets side, reversing the 2008 and 2009 trend that was due to deteriorating corporate profits.

3.2.3 An increased systematic component in the revisions to net services is shown by the root mean square relative error

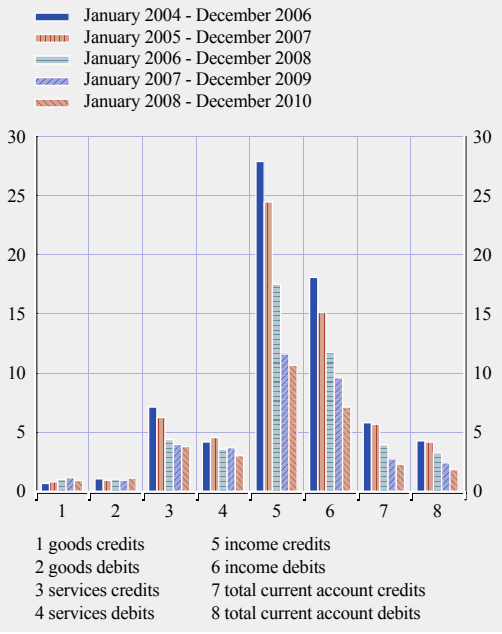
For both the net items of the current account and the balancing items of the financial account, another type of indicator is used on account of the difficulty in correctly estimating very volatile series, namely the root mean square relative error (RMSRE). This indicator measures the distance between the first assessment and the final assessment in relation to the volatility of each time series. The volatility of each series is estimated by its standard deviation, assuming that the series fluctuates around the average in a stable way.[22]

Chart 3 contains the results for the period from 2008 to 2010, and their further breakdown

22 The assumption of stationarity for the net/balancing items has been confirmed by standard statistical tests. In order to remove the effect of large outliers, mainly in the financial account, the standard deviation is calculated without considering the two most extreme observations in the period concerned.

Chart 2 Revisions to the euro area current account as a percentage of the respective flow

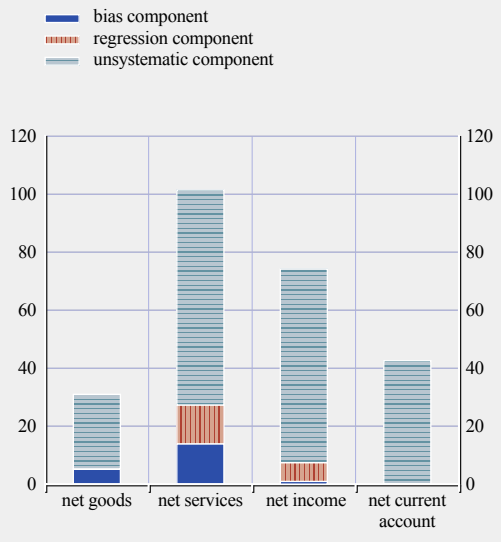
(MAPE)



Source: ECB.

Chart 3 Breakdown of the revisions to the euro area current account as a percentage of volatility in the period from 2008 to 2010

(RMSRE)



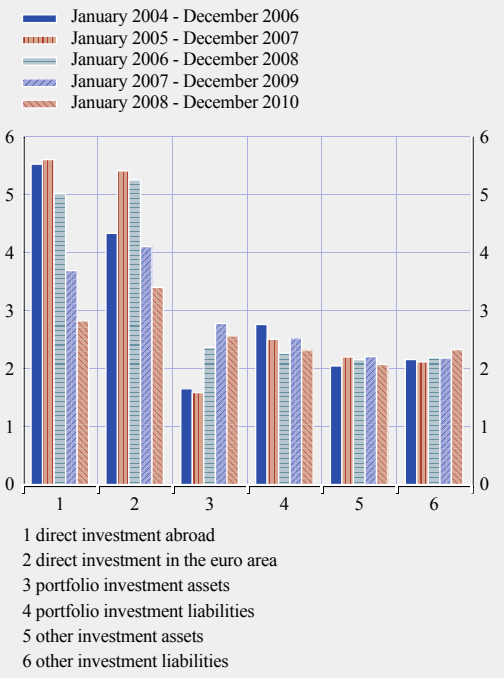
Source: ECB.

into a bias, a regression and an unsystematic component. The results for all periods are shown in the tables in Annex 2. The revisions to the current account balance have increased slightly in comparison with the previous period, as a consequence of larger relative revisions to each net current account component. However, the revisions do not show any relevant systematic component.

The results of the breakdown by item show that the relative revisions to net goods have a visible bias component of 17% of the RMSRE; however, the revisions cannot be considered biased as their mean is not significantly different from zero.[23] In addition, the bias component for net services has increased (from 3% to 14% of the RMSRE value), as has the regression component (from 6% to 13% of the RMSRE value). This increase of the systematic components is partly related to the recurrent positive revision to the monthly net services from January 2008 onwards, incorporated in 2011 into the euro area aggregate due to the change of the compilation system in one euro area country.

Chart 4 Revisions to the euro area financial account assets and liabilities as a percentage of the corresponding i.i.p. item

(MACE)



Source: ECB.

3.2.4 The mean absolute comparative error shows a steady improvement in the stability of the estimates of direct investment

The indicator used to evaluate the revisions to the preliminary estimates of assets and liabilities in the financial account is the mean absolute comparative error (MACE). The MACE is equal to the average of the absolute revisions in relation to the corresponding outstanding amount in the i.i.p.

Chart 4 presents the results for the estimates of direct, portfolio and other investment assets and liabilities. The average revisions to the preliminary estimates of direct investment continue to be the highest, both abroad (assets) and in the euro area (liabilities); however, the stability of the estimates for direct investment abroad and in the euro area has increased again in the last three-year period (with the MACE falling from 0.37% to 0.28% and from 0.41% to 0.34% respectively).

In addition, the relative revisions to the portfolio investment assets and liabilities have decreased moderately in the last three-year period, thus reversing in particular the increasing trend in the revisions to portfolio investment assets since the period 2003-05 (see Table 6 and Chart 6 in Annex 2 for data prior to 2004). The main reason for this reversing trend towards more stable data is the general consolidation of and experience already gained with the collection and compilation of portfolio investment data on a security-by-security basis, which have been in place in all euro area countries since 2009.

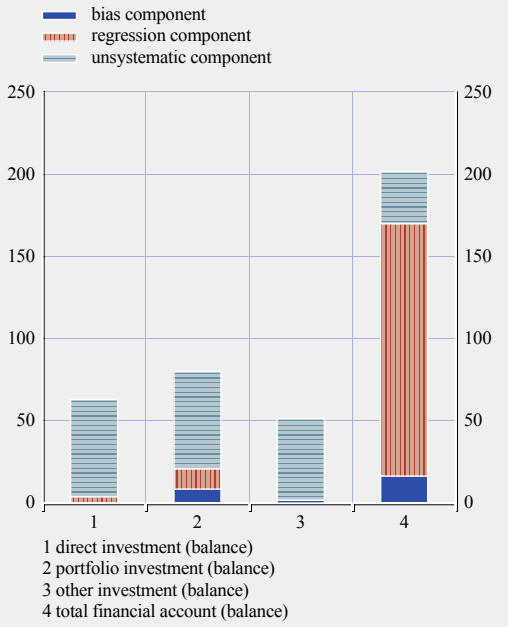
23 As the revisions follow a Normal distribution, a t-test is applied.

3.2.5 A decreasing bias in the revisions to estimates of portfolio investment

The revisions to net direct investment in relation to their volatility are slightly lower than those in previous periods and show quite stable components. By contrast, the relative revisions to the estimates of net portfolio investment are higher than in the previous three-year period (80% versus 76%), mainly due to the reduction of volatility in portfolio investment flows. In spite of this, the bias component has decreased and the mean of the revisions is not significantly different from zero for the period shown in Chart 5.[24] This reduction in the bias is related to the stabilisation of both the methodology implemented at the euro area level in 2009 and the portfolio investment compilation systems implemented by the member countries before 2009. Furthermore, the relative revisions to the other investment estimates have increased slightly (see Tables 5, 6 and 7 in Annex 2).

Chart 5 Breakdown of the revisions to the euro area financial account as a percentage of volatility in the period from 2008 to 2010

(RMSRE)



Source: ECB.

The balancing item of the financial account as a whole shows a very large RMSRE value, which is attributed mainly to the regression component. This value is lower than the one from the last period and it is still related to the methodology applied since 2009 that reflects two simultaneous factors, namely (i) a moderate increase in revisions from January 2004 to June 2009 and (ii) a significant decrease in the volatility of the financial account series. This methodology affected the compilation of euro area portfolio investment liabilities, as well as other investment assets, producing at that time some revisions that are still visible in Chart 5; however, those revisions did not include a large regression component as the methodology reduced to a minimum the impact on the patterns in the directly adjusted time series. By contrast, it has a large impact on the pattern and volatility of the total financial account, thus introducing a large regression component in its revisions.

3.2.6 Stability of the net international investment position

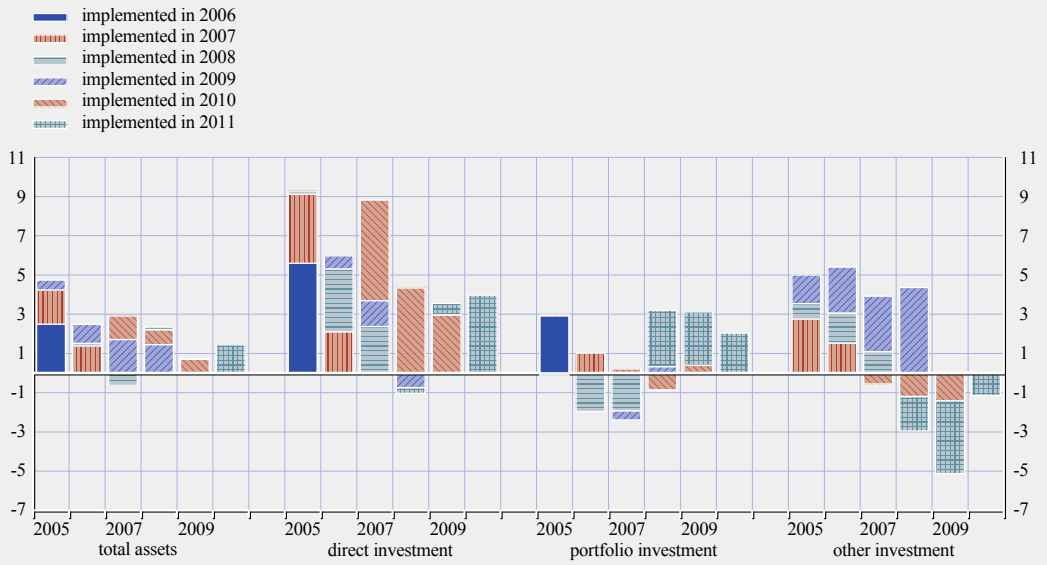
The different vintages of revisions to the main items of euro area i.i.p. assets and liabilities are shown in Charts 6 and 7 respectively. The revisions implemented in 2011 refer to 2008, 2009 and 2010 data. Direct investment both abroad and in the euro area are the most revised items of the 2010 i.i.p. data in relative terms; however, the relative revisions for 2009 and 2008 data, in particular for direct investment abroad, were much smaller than the comparable revisions implemented in 2010. Revisions to portfolio investment and other investment liabilities remain quite stable, while the regular revisions to portfolio and other investment assets implemented in 2011 were much larger than those implemented in 2010.

Total relative revisions to the direct investment items have become steady in the last few years. The first vintage of revisions usually still tends

24 As the revisions follow a Normal distribution, a t-test is applied.

Chart 6 Revisions to the first estimates of the euro area i.i.p. – assets by reference period

(percentage of the i.i.p.)

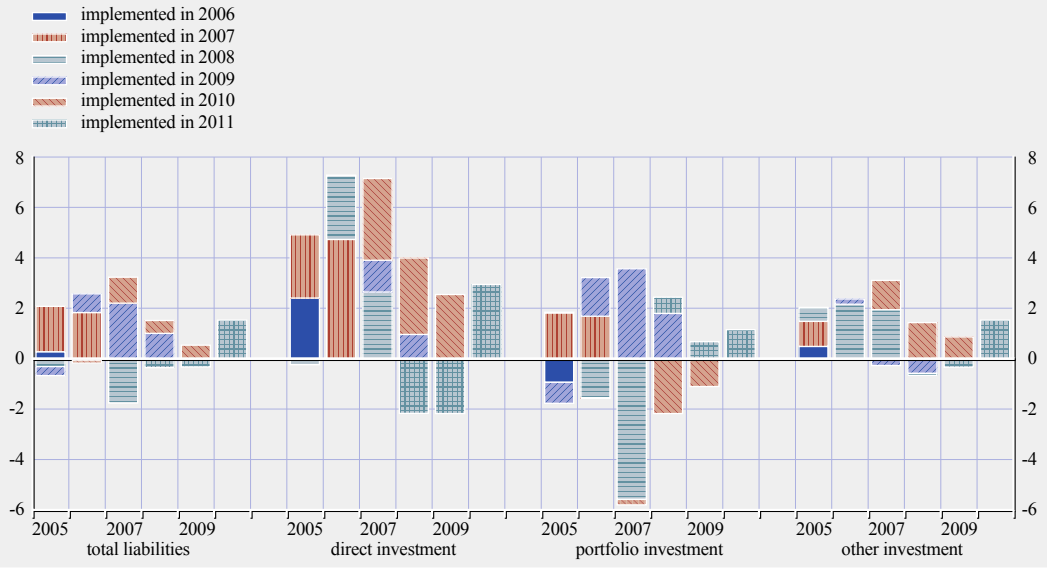


Source: ECB.
Note: The first assessment is based on the quarterly i.i.p.

to be upward revisions and, at the balance level, part of these revisions is cancelled out. The total relative revisions to portfolio investment assets have largely increased with the revisions implemented in 2011 for the three periods being studied, while the relative

Chart 7 Revisions to the first estimates of the euro area i.i.p. – liabilities by reference period

(percentage of the i.i.p.)



Source: ECB.

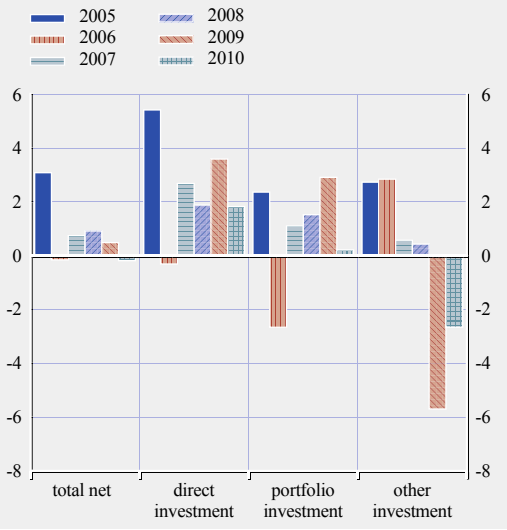
revisions to portfolio liabilities have remained quite steady; however, the revision at the balance level has been almost cancelled out in relative terms for end-2010 data (see Chart 8). Other investment assets have incorporated the largest revisions for end-2009, revisions that are still very visible at balance level.

All in all, the revisions to the total asset positions as at end-2009 amounted to €103 billion, which represents 0.7% of total assets, while the revisions to positions as at end-2008 amounted to €314 billion (2.2% of total assets), but the latter includes one vintage more of revisions. On the liabilities side, the corresponding revisions to the end-2009 positions amounted to €31 billion (0.2% of total liabilities), while the revisions to the end-2008 positions came to €178 billion (1.1% of total liabilities).

Chart 8 shows that the overall revisions to the estimates for total assets and liabilities almost offset each other, except in the case of 2005 data, as the revisions to the 2005 i.i.p. were much larger on the assets side of direct, portfolio and other investment than on the liabilities side. The overall revisions to the end-2010 i.i.p. were smaller than those to previous data, as a consequence of smaller and compensated revisions in the i.i.p. components.

Chart 8 Total revisions to the first estimates of the end-year net euro area i.i.p. by reference period

(percentage of average i.i.p. assets and liabilities)



Source: ECB.

3.3 CONSISTENCY AND COMPARABILITY OF THE STATISTICAL OUTPUT

Consistency indicators deal with several aspects: (i) consistency over time, (ii) consistency within a single dataset (internal consistency), (iii) consistency across datasets (external consistency) and (iv) consistency across frequencies; in addition, they must be (v) comparable with statistics of other regions and countries (comparability with their main partners). For the euro area b.o.p. and i.i.p., internal consistency is assessed by the item on net errors and omissions, and external consistency is measured by discrepancies vis-à-vis other statistics such as foreign trade statistics, external MFI balance sheets and euro area accounts.

Furthermore, consistency covers the effect of a given transaction on subsequent b.o.p. and i.i.p. data (e.g. a change in positions may affect future income flows), or the same recording of a single transaction by both parties involved. Since 2007 the ECB has published an annual reconciliation between b.o.p. and i.i.p. statistics.[25] In particular, the change in the annual positions (i.i.p.) is broken down by b.o.p. transactions, price changes, exchange rate changes and other adjustments. A box included in the 2006 quality report[26] explained the reconciliation between the financial transactions included in the b.o.p. and the stocks reflected in the i.i.p.

3.3.1 Internal consistency

Net errors and omissions constitute the overall balancing item of the b.o.p., and thus provide an indicator of its internal consistency. In fact, the principle of double-entry bookkeeping implies

25 See Table 7.3.1 entitled "Summary financial account" in the ECB's Monthly Bulletin for the reconciliation between flows and stocks.

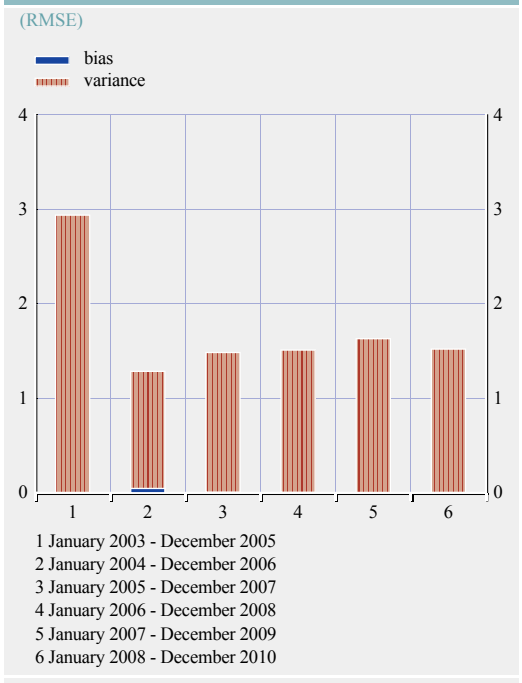
26 Available on the ECB's website at http://www.ecb.europa.eu/2006 Quality report.pdf.

that the sum of all transactions with the rest of the world should be equal to zero in the b.o.p. statement. A large or persistent residual may hinder data analysis and interpretation.

The root mean square error (RMSE) indicator was calculated from the time series on net errors and omissions as a percentage of the gross flows in the euro area current account. This indicator is also used to identify a potential bias (as positive and negative errors and omissions should normally cancel each other out within a given time frame).

In the period from January 2008 to December 2010, the RMSE of the net errors and omissions of the euro area b.o.p. amounted to 1.5% of the average gross current account flows, showing a stable behaviour compared with the period from 2007 to 2009. Chart 9 shows that the internal consistency of the b.o.p. has largely improved after the implementation of the new compilation system[27] for the euro area aggregates carried out in November 2009, with backward revisions from January 2004.[28]

Chart 9 RMSE of net errors and omissions as a percentage of gross flows in the euro area current account



Source: ECB.

3.3.2 External consistency

3.3.2.1 Consistency with other statistics

The b.o.p. series have also been compared with the corresponding data published by Eurostat for euro area foreign trade statistics[29] and with the external transactions derived from the MFI balance sheet and euro area accounts statistics published by the ECB. Although the methodologies used for those series are not fully consistent with that used for the euro area b.o.p., they broadly reflect the same economic phenomena. Therefore, the differences should be fairly stable over time.

For the time being, *foreign trade statistics* are the source used to compile the goods balance of the b.o.p. statistics in all euro area countries except Greece. The conceptual adjustments to the external trade data mainly reflect the differences in the definition of foreign transactions applied in the two sets of statistics. While trade statistics consider a transaction to have taken place when there is a physical movement of goods across borders, the b.o.p. compiler has to measure goods on a change-of-ownership basis.

Table 1 contains the results for the average of the absolute differences between the growth rates of exports and imports. The indicators show that the discrepancies have gradually decreased for exports and imports since 2003, and that they have started to rise from the period 2007-09. However, the revisions incorporated in 2011 in the two datasets have improved the consistency from 2006 for both exports and imports, which reveals that one of the sources of the discrepancies are the different data vintages. The different results obtained by the averages of the ordinary and absolute differences indicate

27 Further information is available in the "Balance of payments and international investment position" sub-section of the "Statistics" section on the ECB's website (http://www.ecb.europa.eu/stats/external/balance/html/index.en.html).

28 See Box 2 in the 2009 quality report, available on the ECB's website at http://www.ecb.europa.eu/2009 Quality report.pdf.

29 Comparison based on data published at end-December 2011.

Table 1 Euro area goods in the b.o.p. and in external trade statistics

(month-on-month growth rate in percentage points)

	Period	Exports	Imports
Average of absolute differences	2003-2005	0.93	0.75
	2004-2006	0.72	0.70
	2005-2007	0.49	0.60
	2006-2008	0.35	0.44
	2007-2009	0.45	0.47
	2008-2010	0.56	0.58
Average of differences	2003-2005	0.02	0.01
	2004-2006	-0.04	-0.09
	2005-2007	-0.04	-0.05
	2006-2008	-0.03	-0.08
	2007-2009	-0.03	0.02
	2008-2010	0.03	0.03

Sources: ECB and Eurostat.

the lack of a persistent divergence of the growth rates of the two series.

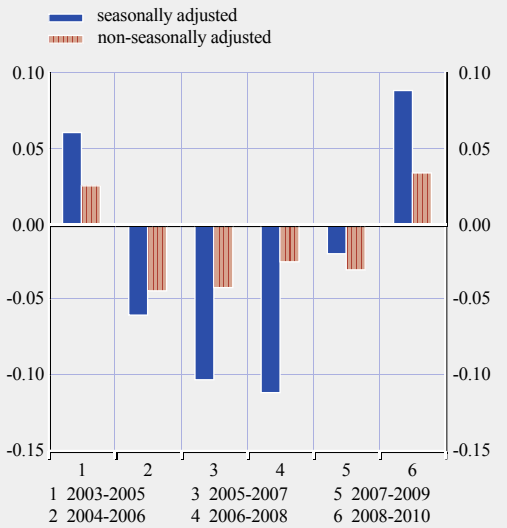
Both sets of statistics are also published adjusted for seasonal and calendar effects. Charts 10 and 11 show three-year averages of the differences in month-on-month growth rates for exports and imports of goods on the basis of both seasonally and calendar-adjusted data and raw data. In both cases, the indicator for the adjusted data reveals more differences than that for the raw data. This shows that the different methodologies applied by the ECB and Eurostat to adjust the raw data affect the consistency of (Eurostat's) trade and (the ECB's) b.o.p. statistics.[30]

Even though, in principle, both the b.o.p. and the *MFI balance sheet items* (BSI) comply with international statistical standards, a number of differences can be identified with regard to their practical implementation, including the use of different statistical sources, differences in the timeliness of the data reporting and simplifications in one or the other reporting system, which are accepted for the sake of reducing the reporting burden. In terms of compilation systems, the b.o.p. transactions for the MFI sector are reported directly by the MFIs in some countries, whereas in the BSI data, transactions are derived from differences in stock data (adjusted for

30 For more information on the different methodologies applied by the ECB and Eurostat, see Table 3 in "Euro area balance of payments and international investment position statistics – 2009 quality report", ECB, March 2010 (available at http://www.ecb.europa.eu/pub/pdf/other/euroareabalanceofpaymentsandiipstatistics201003en.pdf).

Chart 10 Exports of goods in b.o.p. and external trade statistics

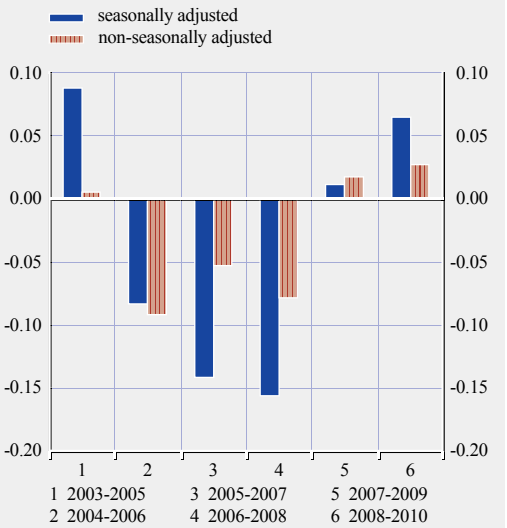
(three-year average of the differences in month-to-month growth rates; percentage points)



Sources: ECB and Eurostat.

Chart 11 Imports of goods in b.o.p. and external trade statistics

(three-year average of the differences in month-to-month growth rates; percentage points)



Sources: ECB and Eurostat.

reclassifications, foreign exchange rate changes and price revaluations). In practice, this may give rise to a number of differences in the resulting net transaction data, in particular if a large proportion of transactions are denominated in foreign currencies and if the volatility of exchange rates or securities prices is high.

In general, the methodological differences between the b.o.p. data and the transactions derived from the MFI balance sheets are very limited. In certain cases, information that is available for the b.o.p. is not identified separately in the BSI data, for instance, financial derivatives or other payable/receivable accounts. The different treatment of (i) borderline cases between loans and securities, as well as between securities and derivatives, (ii) inter-company financing, (iii) short selling and reverse transactions and (iv) the accrued interest that should be reported together with the asset to which it relates should be resolved in the medium term with the implementation of the European System of Accounts (ESA) 2010 in the BSI statistics and the current update of international statistical standards.

In Table 2, the RMSRE reflects the distance between the recording of net deposits and loans of MFIs excluding the Eurosystem in b.o.p. and monetary statistics, in relation to the volatility of the b.o.p. series concerned. This indicator shows that after a period of good behaviour from 2005-07, in terms of increasing relative consistency but also in terms of correction of systematic components, the levels in the latest three-year period (2008-10) have become similar to those of periods before 2003, although the bias and regression components remain low.

The increase of the RMSRE mainly reflects the deterioration in consistency after the implementation of the new ECB Regulation concerning the balance sheet of the monetary financial institutions sector[31] in June 2010. The adjustments introduced to the reporting under the new regulation were not consistent in both datasets. In addition, during 2010 the amount of flows recorded under the b.o.p. item other assets and other liabilities increased considerably, and this has been identified as a source of discrepancies as the BSI statistics do not separate geographically this type of assets and liabilities.

Table 3 contains the results for the consistency of securities holdings of MFIs excluding the Eurosystem in b.o.p. and monetary statistics, in relation to the volatility of the b.o.p. series concerned. The RMSREs are larger due to two factors: (i) the discrepancies are larger; and (ii) the volatility of the b.o.p. series concerned is lower. The relative consistency has been quite stable from 2005, but the bias component has been more relevant since the euro area b.o.p. statistics started to be compiled based on a security-by-security collection system (i.e. since 2008).[32]

31 Regulation (EC) No 25/2009 of the European Central Bank of 19 December 2008 concerning the balance sheet of the monetary financial institutions sector (ECB/2008/32), OJ L 15/14, 20.1.2009.

32 Although Guideline ECB/2007/3 required the implementation of security-by-security collection by the first quarter of 2009, most of the euro area countries finally compiled 2008 data based on the new collection system.

Table 2 Euro area deposits/loans of MFIs (excluding the Eurosystem) – comparison with corresponding net transactions from monetary statistics

Period	RMSRE	Bias component (%)	Regression component (%)	Unsystematic component (%)
2003-2005	7.7	1.9	1.1	97.1
2004-2006	7.4	10.8	0.1	89.1
2005-2007	9.6	4.0	8.6	87.4
2006-2008	7.9	1.6	0.0	98.4
2007-2009	7.5	0.4	0.1	99.5
2008-2010	11.4	0.9	0.2	98.9

Source: ECB.

Table 3 Securities assets of MFIs (excluding the Eurosystem) – comparison with corresponding net transactions from monetary statistics

Period	RMSRE	Bias component (%)	Regression component (%)	Unsystematic component (%)
2003-2005	35.5	0.1	11.6	88.3
2004-2006	31.9	0.3	8.0	91.7
2005-2007	36.0	0.4	19.4	80.2
2006-2008	34.8	9.0	5.9	85.1
2007-2009	33.8	8.1	1.6	90.2
2008-2010	34.7	4.5	3.0	92.5

Source: ECB.

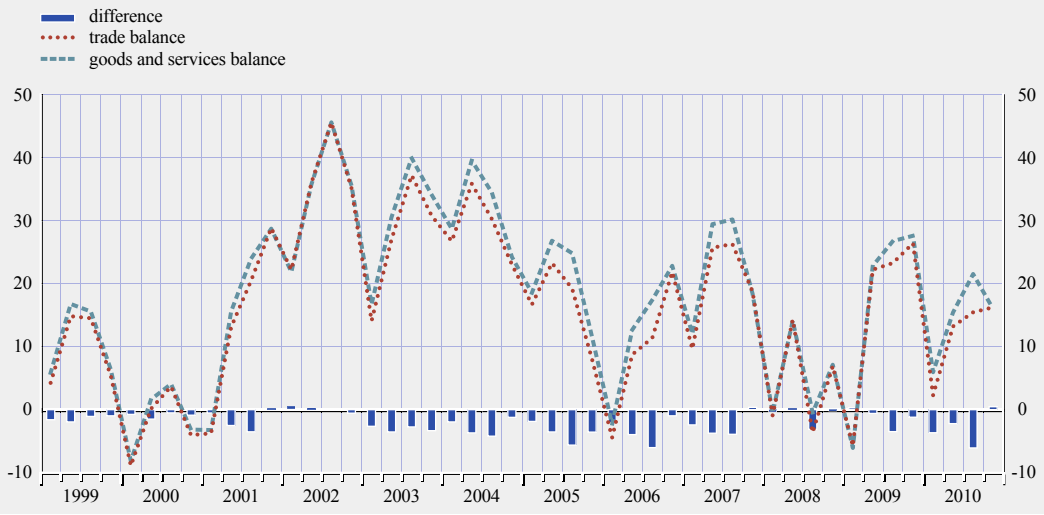
The euro area accounts (EAA) present a complete and consistent set of data for all institutional sectors. They provide comprehensive information not only on the economic activities of households, non-financial corporations, financial corporations and the general government, but also on the interactions between these sectors (of the euro area) and the rest of the world. Transactions with non-residents and the financial claims of residents on non-residents, or vice versa, are recorded in the "rest of the world" account. Although the euro area b.o.p. and i.i.p. statistics are the major source for the rest of the world account in the EAA, some methodological differences and the EAA integration process imply that the final data shown in the rest of the world account are not identical to the corresponding b.o.p./i.i.p. data, but they should nevertheless broadly reflect the same economic phenomena.[33]

The analysis below focuses on the goods and services balance and on the total financial account compared with the corresponding figures published in the EAA. Chart 12 shows, at quarterly frequency, the differences between the trade balance (including services) in the EAA and the goods and services balance in the b.o.p. The b.o.p. figure is usually somewhat larger than the figure for the EAA. Furthermore, differences

33 See Box 2 in the 2010 quality report, which is available on the ECB's website at http://www.ecb.europa.eu/2010 Quality report.pdf.

Chart 12 Trade balance (EEA) vs goods and services balance (b.o.p.)

(EUR billions)



Source: ECB.

can be observed, which are especially large and persistent from the first quarter of 2003 to the third quarter of 2007, and from the third quarter of 2009 to the third quarter of 2010. A seasonal behaviour is also visible in the discrepancies, as the difference is recurrently larger for the third-quarter figures.

Net lending/net borrowing computed in the EAA for the rest of the world account should reflect the same economic phenomena as the financial account of the b.o.p. Chart 13 shows that part of the differences between both sets of statistics is related to the net errors and omissions in the b.o.p., which are mostly allocated to the financial account in the EAA. This phenomenon marks the relationship up to the fourth quarter of 2003, in particular because the errors and omissions in the b.o.p. are relatively large. After the first quarter of 2004, with the reduction of the errors and omission in the b.o.p., the differences are smaller and the reason for them is, most of the time, other types of adjustments made by the EAA. In addition, the deterioration of the consistency between b.o.p. and BSI data for loans and deposits after the implementation of the new ECB Regulation concerning the balance sheet of the monetary financial institutions sector in June 2010 also has an indirect effect on the consistency of the b.o.p. with the EAA.[34]

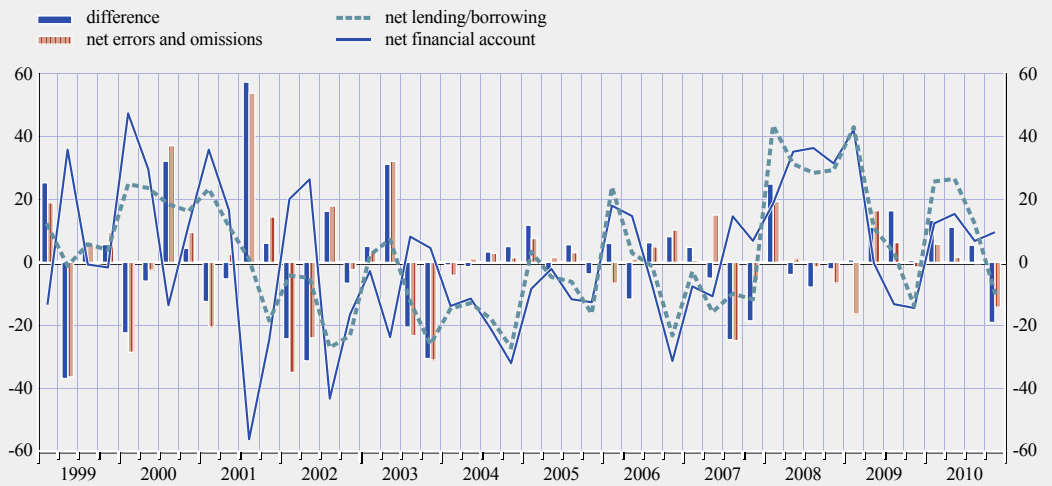
Chart 14 shows that the net i.i.p. has repeatedly been lower than the net closing balance sheet of the rest of the world sector in EAA statistics. These differences arise mainly from compilation practices, namely the decision to compile amounts outstanding from the accumulation of flows (transactions and other flows), instead of directly reconciling amounts outstanding in the EAA. Therefore, the elimination of asymmetries, allocation of net errors and omissions and reduction of breaks in the series in the EAA all contribute to a departure of the net closing balance sheet of the rest of the world sector from the net i.i.p., in particular for data from 1999 to 2006. Additionally, some data source preferences, such as the use of BSI statistics for the deposits and loans of MFIs vis-à-vis the rest of the world may also contribute to some punctual or even structural differences.[35]

34 This is because BSI data are used in the estimation of transactions/positions of the MFI sector vis-à-vis the rest of the world for loans and deposits.

35 EAA compilers assume that insurance technical reserves are mostly not covered by the euro area b.o.p./ i.i.p.; however, the BPM5 covers this type of instrument, although they are not explicitly separated. This may generate some double-counting.

Chart 13 Net lending (+)/net borrowing (-) (EEA) vs net financial account (b.o.p.) and statistical discrepancies (b.o.p.)

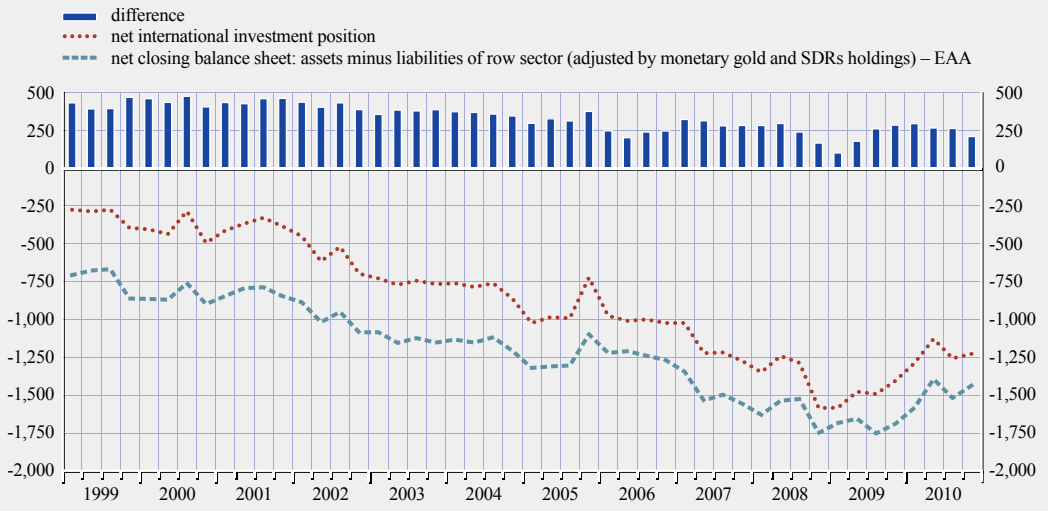
(EUR billions)



Source: ECB.

Chart 14 Net euro area financial position with the rest of the world

(EUR billions)



Source: ECB.

3.3.2.2 Comparability with statistics released by the main euro area counterparts: the United Kingdom, the United States and Japan

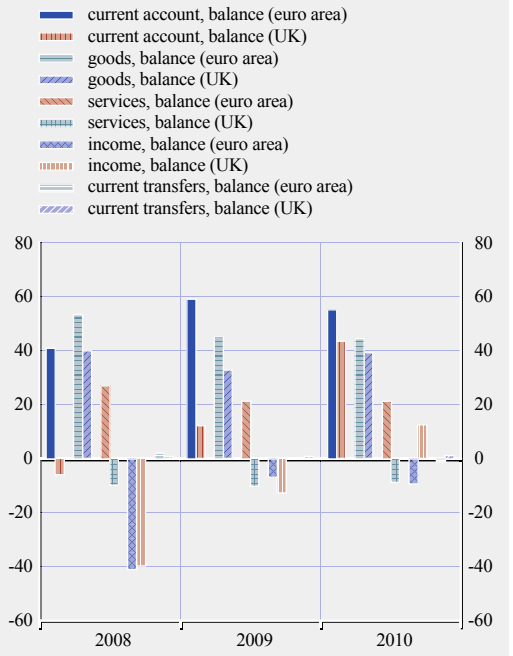
With regard to the consistency of the euro area data with the data released by its main counterparts, the asymmetries between the current account balance of the euro area and that of the United Kingdom mainly relate to services exports from the euro area to the United Kingdom in 2008-10 (see Chart 15 and Table 9 in Annex 3). The euro area data show considerably and persistently higher exports of services to the United Kingdom than those recorded as imports from the euro area to the United Kingdom. The relative difference increased steadily from 36% in 2008 to 41% in 2009 and 2010. With respect to imports of services, the euro area figures are also larger than the UK figures for exports to the euro area, with a relative difference of 22% in 2008, which rose to 34% in 2009 and then fell back slightly to 33% in 2010. The economic interpretation of the euro area services balance vis-à-vis the United Kingdom changes depending on which figures are used in the analysis. While the euro area shows a positive but decreasing balance from 2008 to 2010, the United Kingdom also has a steady positive services balance.

For income, the discrepancies increased significantly in 2010, with the same economic interpretation problem as for services. The divergences in income debits have been quite large since 2008, as the euro area persistently reported higher income expenditure in the United Kingdom than that reported by the United Kingdom (35% on average). In addition, in 2010 the income receipts from the United Kingdom as reported by the euro area are also much larger than those reported by the United Kingdom.

The asymmetries in goods follow a different pattern. While the flows recorded by the euro area as exports largely exceed the mirror flows recorded by the United Kingdom, the imports from the United Kingdom recorded by the latter are now higher than the exports from the United Kingdom recorded by the euro area. The relative discrepancies for exports and imports of goods reached 34% and 14% respectively in 2010, amounts that offset each other at the balance level, giving the smallest difference in the last four years (€5.1 billion).

Chart 15 Euro area current account transactions with the United Kingdom from 2008 to 2010

(EUR billions)



Sources: ECB and the Office for National Statistics of the United Kingdom (2011 edition of the Pink Book).
Notes: While the euro area aggregates still follow the BPM5 for the recording of the financial intermediation services indirectly measured (FISIM), i.e. it is included in the income account, the United Kingdom data exclude FISIM from income and it is included in the services account. The estimated effect is €2.5 billion for 2010. That adjustment would slightly reduce the discrepancies for both services and income. This methodological difference does not have any effect at the current account balance level.

All in all, the euro area exhibits a current account surplus of €54.9 billion vis-à-vis the United Kingdom, while the United Kingdom shows a deficit of €43.2 billion vis-à-vis the euro area in 2010.

The revisions in both statistics have generally improved the consistency for previous years in the case of both credits and debits.

The current account balances of the euro area and the United States showed less sizeable asymmetries (see Table 10 in Annex 3). The revisions published by the ECB and the US Bureau of Economic Analysis (BEA) in 2011 have had a mixed impact on the consistency of 2008 and 2009 data for the current account balances, as most of the asymmetries for the current account components have improved; however, the total current account balance has deteriorated, in particular for 2008 when the euro area current account balance vis-à-vis the United States showed a deficit of €3.7 billion, while the United States also presented a current account deficit vis-à-vis the euro area (€5.4 billion).

Finally, as was the case with the United Kingdom, the euro area data show persistently higher exports of services to the United States than those recorded as imports from the euro area in the United States. The asymmetries for 2010 have been reduced for the total current account mainly due to the reporting of a more consistent net income. In particular, the income expenditure in the United States and the receipts from the United States are equally overestimated by the b.o.p. of the United States.

The current account balances of the euro area and Japan show asymmetries that, although not large in absolute terms, have deteriorated in relative terms in the last years (from 4% in 2008 to 12% in 2010). Income is the most relevant current account component with Japan and the consistency is quite good and improving over time. Estimates for goods and services flows continued to be the main source of differences (see Table 11 in Annex 3).

3.4 TIMELINESS (AND PUNCTUALITY) OF THE STATISTICAL OUTPUT

The euro area b.o.p. statistics are published on a monthly basis. Additional breakdowns by sector, instrument and geographical counterpart are available on a quarterly basis. Moreover, the euro area i.i.p. and gross external debt statistics are published quarterly. Further breakdowns by currency for portfolio investment debt securities are available on a semi-annual basis. Additional details on foreign direct investment (FDI) and

breakdowns by geographical counterpart, as well as a reconciliation between b.o.p. and i.i.p. statistics, are provided at an annual frequency.

Together with the monthly release of the non-seasonally adjusted b.o.p. data, the ECB publishes seasonally and working day-adjusted data for the b.o.p. current account items. These data facilitate the interpretation of the latest developments by removing the seasonal pattern, as well as variations due to working-day and holiday effects. A note on the methodology used for the seasonal adjustment of the euro area b.o.p. can be found on the ECB's website.[36]

In 2011 the ECB fully complied with its advance release calendar, i.e. the data were published four working days after they were received by the ECB. Monthly data were published seven weeks after the end of the respective month, thereby also making an assessment of the quarterly and annual flows possible within two months, e.g. the first assessment for the full year 2010 was published on 17 February 2011.[37] Quarterly b.o.p. details, as well as the quarterly i.i.p., were published three-and-a-half months after the end of the reference quarter.[38] The annual i.i.p. with further details was released ten months after the end of the reference year.

3.5 ACCESSIBILITY AND CLARITY OF THE STATISTICAL OUTPUT

The press releases on euro area b.o.p. and i.i.p. data are published through wire services and on the ECB's website in accordance with the advance release calendar. In 2011 the number of press releases was reduced to 13 – as from the publication of data for the fourth quarter of 2009 (April 2010), the press releases on the quarterly and monthly data were combined in the month in which the quarterly publication took place. The most recent data and longer time series with the current or historical composition of the euro area, and the corresponding metadata, can be downloaded from the Statistical Data Warehouse (SDW),[39] the ECB's interactive database, or from the ECB's website in the form of predefined CSV and PDF files. The data are also included in the issue of the ECB's Monthly Bulletin that is published after the press release.

The ECB has a specific e-mail address for external users of statistics, namely statistics@ecb.europa.eu, which serves to provide assistance to users in accessing and analysing the data.

36 See http://www.ecb.europa.eu/stats/pdf/sa_procedures.pdf.
37 The benchmark in the IMF Special Data Dissemination Standard (SDDS) is three months.
38 For example, the end-2009 i.i.p. was published in April 2010. The benchmark in the SDDS is nine months.
39 http://sdw.ecb.europa.eu.

ANNEXES

1 METHODOLOGICAL DOCUMENTATION FOR QUALITY INDICATORS[1]

This annex contains the methodology used for the quantitative indicators to assess reliability/stability and serviceability/consistency.

1 RELIABILITY/STABILITY

In the IMF's terminology, the study of revisions is normally referred to as *reliability*, while some quality work at the European level is also referred to as *stability*. The underlying concept is however the same and can be defined as "*the closeness of the initial estimated value(s) to the subsequent estimated values. Assessing reliability involves comparing estimates over time. In other words, assessing reliability refers to revisions*".[2]

The number of revisions observed depends on the revision policy/practice of a statistical agency or department, which normally decides beforehand (sometimes in collaboration with the users) how many times and when the estimates should be revised and communicated to the public.

As an example, with reference to a series X with N observations, the statistical agency can decide to publish it k times with predefined time lags $\{l_1, l_2, ..., l_k\}$. From the k sets of data, revisions can easily be derived, normally as the difference between two subsequent assessments. Therefore, a revision variable or series can be defined as the difference $R_{ij} = X_j - X_i$, where i and j identify two specific time-lags, with j > i. The joint ECB (DG-S)/Commission (Eurostat) Task Force on Quality (TF-QA) suggested measuring revisions by means of the difference between the first and latest assessments: $R = X_k - X_1$.

Revisions may also be calculated over a transformation of the original series, such as the respective first difference or the growth rate.

1.1 SIMPLE MEASURES OF REVISIONS

1.1.1 Size indicators

Simple indicators of revisions express the changes in relation to the size of the variable X. An average of these revisions ($\overline{R}$) then provides an indication of how far on average the first assessment was from the latest assessment. However, if large positive and negative revisions almost cancel out, this may provide a spuriously positive impression of data quality. Therefore, the average of the absolute revisions ($\overline{|R|}$) is generally seen as a better stability indicator.

1.1.2 Directional indicators

In principle, positive and negative revisions should occur with roughly the same frequency. If the revisions are systematically positive, this may point to an undercoverage in early estimates, which needs to be corrected somehow. A simple indicator for this phenomenon is the ratio between upward revisions and the number of observations (N).

upward revisions ratio = (# upward revisions)/N

To assess whether the information on the direction of changes as contained in the earlier estimates has been altered by the revisions, a *2 x 2* contingency table can be set up. In this contingency table the columns consist of positive and negative first differences of the early estimates $\Delta x_{t_1} = x_{t_1} - x_{(t-1)_1}$, while the rows consist of positive and negative changes of the latest values $\Delta x_{t_k} = x_{t_k} - x_{(t-1)_k}$.

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

1 Based on the report by the joint ECB (DG-S)/Commission (Eurostat) Task Force on Quality.

2 Carson, Carol S. and Laliberté, Lucie, "Assessing accuracy and reliability: a note based on approaches used in national accounts and balance of payments statistics", *Working Paper Series*, No 02/24, IMF, February 2002.

The directional reliability indicator (Q) is then as follows:

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

This coefficient Q is equal to 1 if the changes following the earliest and the latest estimates always have the same sign $(n_{11} + n_{22} = N)$, while it is equal to 0 when there is a total dissociation $(n_{11} + n_{22} = 0)$. Obviously, higher values of this indicator are preferred.

1.2 RELATIVE MEASURES OF REVISIONS

It is often useful to also provide relative measures, which relate the revisions to dimensional measures of the variable concerned. Two main types of indicators have been developed depending on whether the observations of a time series have only positive values (series on gross transactions or on asset or liability positions) or can have either positive or negative values (series on net transactions or balances).

1.2.1 Gross transactions or asset/liability positions

In the case of gross data, the relative revision equals the percentage change of the initial assessment $\left(\frac{R}{X}\right)$. If the average over time $\overline{\left(\frac{R}{X}\right)}$ is then computed, this is called the *mean percentage error* (MPE).

As revisions can be positive or negative, it is usually more appropriate to take the absolute value, in order to avoid that revisions of opposite sign cancel out in the resulting indicator. So, if the average is calculated with the absolute values, we get $\left|\overline{\frac{R}{X}}\right|$, the *mean absolute percentage error* (MAPE).

1.2.2 Net transactions or balances between assets and liabilities

In the case of net data, revisions cannot be properly related to the series value itself because the observations may have different signs and, even more importantly, the values of the series may often be close to zero.

1.2.2.1 Transactions in assets and liabilities

A solution for assets and liabilities of the b.o.p. financial account is to use the corresponding item in the i.i.p. for assessing the relative size of the revision. This provides a relative measure that the user can easily interpret. The indicator will be expressed as $\frac{R}{P}$, were P is the related i.i.p. item. As for the gross data, an average of the absolute value of this ratio can be taken over time, in order to avoid that revisions of opposite signs cancel out in the resulting indicator.

The mean absolute comparative error (MACE) is defined as $\left|\overline{\frac{R}{P}}\right|$.

As the i.i.p. is not available at a monthly frequency, the calculations of the MACE for b.o.p. data use the level of the i.i.p. at the end of the corresponding quarter.[3]

1.2.2.2 Net transactions in the current account and balances in the financial account

For the b.o.p balancing items, the i.i.p. can have positive and negative observations as well. Therefore, a measure of the volatility of the series X is used as a reference for the size of the revisions. This measure reflects that in practice it is more difficult to correctly estimate values of a volatile series.

The *mean absolute relative error (MARE)* is then defined as $\frac{\left|\overline{R}\right|}{vol\,(X_k)}$.

There are several ways of calculating the volatility of X, using the standard deviation, the average distance from the mean or the median of the distances from the median.[4] In principle, the volatility should be calculated for the latest

3 Before 2003, this is done with annual data.

4 For more detailed information, refer to Annex 1 of "Euro area balance of payments and international investment statistics: annual quality report", ECB, January 2005, or to the report by the joint ECB (DG-S)/Commission (Eurostat) Task Force on Quality http://www.cmfb.org/pdf/TF-QAreport_final_CMFB_jul04.pdf, and to "Quantitative quality indicators for statistics – and application to euro area balance of payments", *Occasional Paper Series*, No 54, ECB, November 2006.

assessment X_k, because those values should be the most accurate ones.

An advantage of using the average distance from the mean is that with a small transformation that indicator can be decomposed into a bias and a variance component. This indicator is calculated as the square root of the ratio between the average of the square revisions and the variance of the series (S^2). It is called the root mean square relative error (RMSRE):

$$RMSRE = \sqrt{\frac{\overline{R^2}}{S^2}}$$

The value of the RMSRE is 0 when the first assessment always equals the latest, 1 if the *first assessment* is only as accurate as the reference *forecast*, which is the time series average, and greater than 1 when the *first assessment* is less accurate than such a *forecast* of the series.[5] The square of the RMSRE can be decomposed as follows:

$$RMSRE^2 = \left[\frac{\overline{X}_k - \overline{X}_1}{S_{X_k}}\right]^2 + \left[r_{X_k X_1} - \frac{S_{X_1}}{S_{X_k}}\right]^2 + \left[1 - (r_{X_k X_1})^2\right]$$

where $r_{X_k X_1}$ is the correlation between the two series, S_{X_k} and S_{X_1} and are the respective standard deviations.

The three components can be interpreted as follows:

1) The *bias component* provides an indication of systematic error, since it measures the extent to which the average values of the early and later assessments deviate from each other. The revisions can be considered biased if the mean of the revisions is significantly different from zero.[6]

2) The *regression component* is another systematic component which reflects whether the overall pattern of the series with the early estimates was close to that of the series with the later estimates. If the initial estimates correctly reflect the pattern/volatility of the later estimates, the correlation between both series will be quite high and this component of the indicator will be close to zero.

3) The *unsystematic* component is the variance of the residuals obtained by regressing the early estimates on the later estimates. This reflects more random revisions.[7]

The limitations of this indicator are: (i) in the case of non-stationary series, its value and decomposition become meaningless and (ii) its interpretation is less straightforward.

After successful tests of the stationarity of the series, this indicator has been applied to assess the revisions in the net current and capital accounts as well as to the balancing items in the financial account.[8]

The following table shows which measures of revisions for the b.o.p. are used in the annual quality report:

Measures of b.o.p. revisions

	Debits	Credits	Net
Current account items	MAPE	MAPE	RMSRE
	Assets	Liabilities	Balance
Financial account items	MACE	MACE	RMSRE

2 SERVICEABILITY/CONSISTENCY

In the IMF's Data Quality Assessment Framework (DQAF), *consistency* is defined as: (i) over time; (ii) between data collected at different frequencies; (iii) internationally; (iv) across variables, either vertically (across transactions), horizontally (across institutional sectors), and/or between flows and stocks.

5 Other measures, like the median and the trimmed mean, were tested as well. Assuming that the b.o.p. financial account net flows are stationary, the average was chosen owing to its simplicity and its ease of interpretation, and because it enables a decomposition of the indicator into meaningful components. If the series is not stationary, the indicator can still be applied using the previous value of the series as the reference value, or using the first difference of the series.

6 Assuming normality for revisions, so as to be able to apply the t test

7 However, the unsystematic part could still hide systematic non-linear patterns.

8 To calculate the indicator for every period (36 observations), the two extreme values have been removed in order to make the results more comparable over time.

The TF-QA focused on the following sub-categories:

- internal consistency, e.g. within the integrated statistics (b.o.p./i.i.p. or national accounts); and
- external consistency (between different sources of data and/or different statistical frameworks); this may include mirror statistics, as international statistics should be the same also when they are compiled by different institutions or by different units of the same institution.

2.1 INTERNAL CONSISTENCY

According to the IMF's 2001 DQAF for the b.o.p., internal consistency implies checking that "over the long run the errors and omissions item *has not been large* and *has been stable* over time".

A measure of the size of this item can be provided by the *average of the absolute net errors and omissions*, $\overline{|EO|}$.

As with revisions, an alternative measure of the size is the *root mean square error of the net errors and omissions*.

$$RMSE(EO) = \sqrt{\overline{EO^2}}$$

As before, this indicator can be decomposed into bias and variance components:[9]

$$RMSE^2 = bias\ component + variance\ component$$

$$RMSE^2 = \overline{EO}^2 + S^2$$

where S is the standard deviation of the errors and omissions.

Besides, the number of positive EO divided by the number of observations can be used to assess the relative frequency of positive EO:

$$CP\,(EO) = \frac{Count\,(EO_t > 0)}{N}$$

2.2 EXTERNAL CONSISTENCY

Although minor discrepancies arising from methodological differences can still be present in two sets of data stemming from different sources and/or different statistical frameworks,[10] a comparison of these two datasets can still provide a useful measure of consistency.

2.2.1 Size indicators

2.2.1.1 Series with positive values

Simple indicators of external consistency relate the differences to the values of the variable that is compared. A simple indicator measuring the consistency between b.o.p. and international trade statistics (ITS) can be computed using the latest assessment of both series.

A preferable indicator is similar to the MAPE $(\overline{|P|})$, but with the percentage differences calculated as proportions of the average of both time series.[11] This indicator captures the magnitude of the discrepancies in absolute value, and relates it to the average size of both series.

Another simple measure is based on the average differences of the growth rates. This also has the advantage that it abstracts from differences in levels between time series, e.g. the imports of goods are measured on a c.i.f. basis in the external trade statistics and on a f.o.b. basis for the b.o.p., while in both statistics exports are measured on a f.o.b. basis. A simple indicator of external consistency then becomes:

$$G = \overline{|G_x - G_y|}$$

9 Following the simplest MSE decomposition. See Diebold, Francis X., Elements of Forecasting, 2001.

10 For example, the comparison between the euro area goods item (b.o.p.) and Eurostat's external trade data, or the comparison between the b.o.p. flows of the MFI sector and flows derived from the consolidated MFI balance sheet from money and banking statistics.

11 $C = \frac{1}{a_t} \sum_{t=T-a}^{T} \frac{|x_t - y_t|}{(x_t + y_t)/2}$

Based on Keuning, S. and Algera, S., "Some elements of a quality framework for CMFB statistics", Statistics Netherlands, October 2001.

2.2.1.2 Series with positive and negative values

Differences between b.o.p. transactions and similar transactions derived from the MFI balance sheet can be attributed to a variety of factors: time of recording and reporting, revision policies and valuation methods.

Relative indicators for assessing reliability can also be used to assess consistency between comparable net flows. The RMSRE indicator is calculated for the latest assessment of each series, using the b.o.p. series as the benchmark.

2.2.2 Directional indicators

Similar to the directional indicators set out in Sub-section 1.1.2, such indicators can also be constructed to check whether the signs of the changes are typically the same in both the series being compared.

2 RESULTS OF STABILITY INDICATORS

Chart 1 Euro area goods

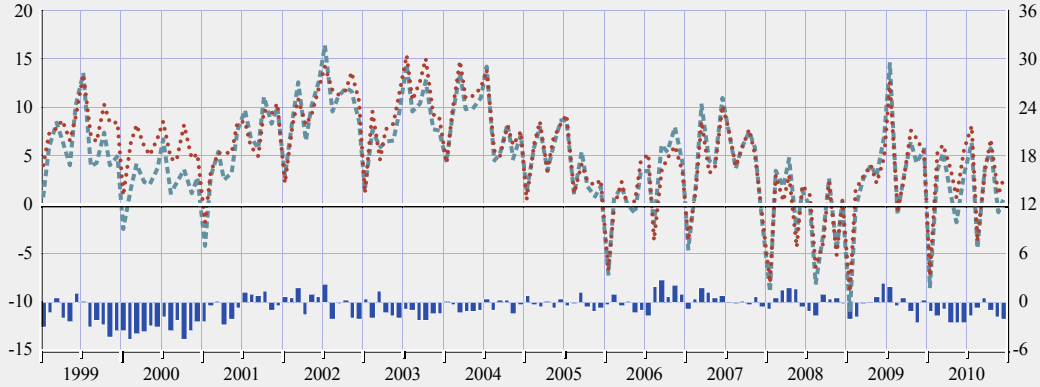
(EUR billions)

revision (right-hand scale)
first assessment (left-hand scale)
final assessment (left-hand scale)

a) Credits

b) Debits

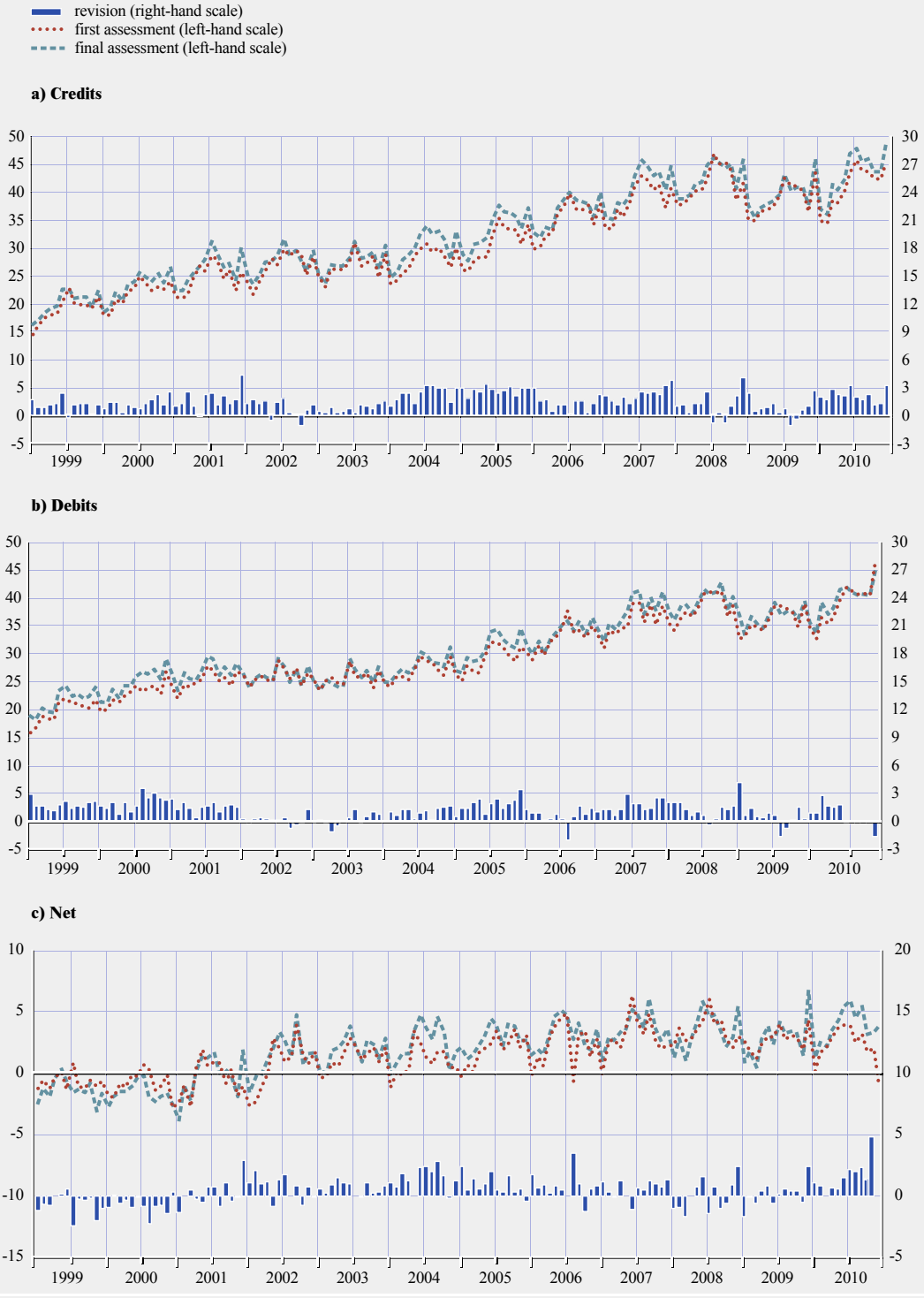
c) Net



Source: ECB.

Chart 2 Euro area services

(EUR billions)



Source: ECB.

Table 1 Stability indicators for euro area goods

Quality indicator	Reference period (Jan.-Dec.)	Goods		
		Credits	Debits	Net
$\overline{R}$	1999-2001	1.34	3.27	-1.93
(EUR	2000-2002	0.83	2.15	-1.31
billions)	2001-2003	0.38	0.98	-0.61
	2002-2004	0.61	1.25	-0.64
	2003-2005	0.29	0.96	-0.67
	2004-2006	0.58	0.72	-0.14
	2005-2007	0.86	0.73	0.14
	2006-2008	1.07	0.79	0.27
	2007-2009	0.95	0.87	0.08
	2008-2010	0.54	1.06	-0.52
$\lvert\overline{R}\rvert$	1999-2001	1.80	3.67	2.26
(EUR	2000-2002	1.48	2.58	1.93
billions)	2001-2003	1.18	1.47	1.32
	2002-2004	1.07	1.35	1.16
	2003-2005	0.61	1.06	0.95
	2004-2006	0.72	1.06	0.82
	2005-2007	0.95	1.05	0.78
	2006-2008	1.29	1.30	0.91
	2007-2009	1.42	1.15	0.91
	2008-2010	1.11	1.38	1.24
MAPE/	1999-2001	2.49	5.55	0.78
RMSRE	2000-2002	1.79	3.42	0.53
(%)	2001-2003	1.40	1.89	0.41
	2002-2004	1.24	1.72	0.45
	2003-2005	0.65	1.27	0.34
	2004-2006	0.69	1.08	0.26
	2005-2007	0.82	0.94	0.26
	2006-2008	1.03	1.06	0.24
	2007-2009	1.17	0.96	0.22
	2008-2010	0.93	1.13	0.31
Q	1999-2001	100.00	94.29	88.57
(%)	2000-2002	97.14	94.29	88.57
	2001-2003	97.14	94.29	91.43
	2002-2004	94.29	97.14	91.43
	2003-2005	97.14	100.00	97.14
	2004-2006	97.14	97.14	91.43
	2005-2007	100.00	97.14	91.43
	2006-2008	100.00	97.14	91.43
	2007-2009	100.00	100.00	94.29
	2008-2010	100.00	94.29	97.14

Source: ECB.
Note: The MAPE is used for credits and debits and the RMSRE for net data.

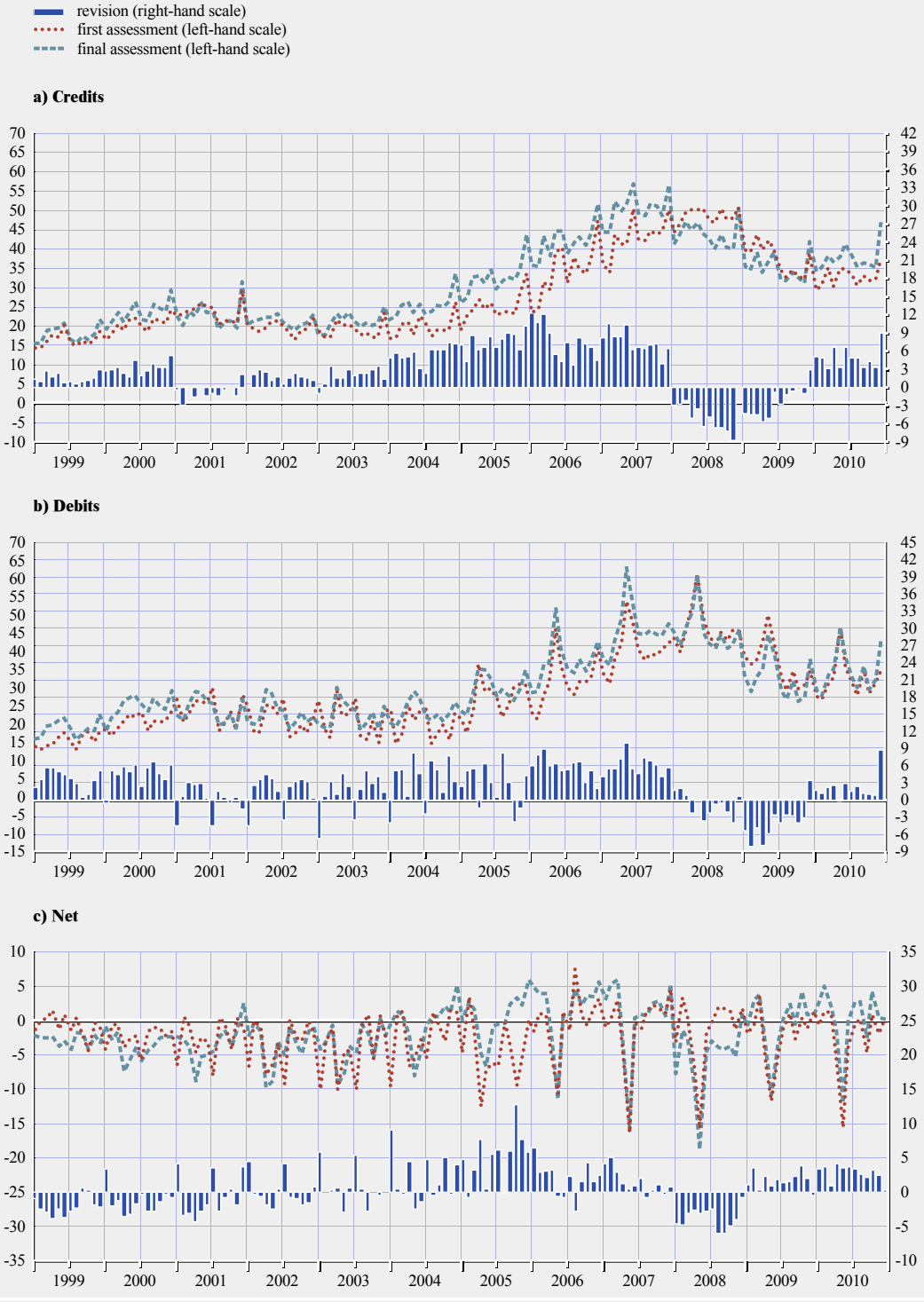
Table 2 Stability indicators for euro area services

Quality indicator	Reference period (Jan.-Dec.)	Services		
		Credits	Debits	Net
$\overline{R}$	1999-2001	1.38	1.79	-0.40
(EUR	2000-2002	1.30	1.25	0.05
billions)	2001-2003	1.12	0.62	0.50
	2002-2004	1.32	0.42	0.90
	2003-2005	1.95	0.98	0.98
	2004-2006	2.15	1.12	1.03
	2005-2007	2.11	1.36	0.75
	2006-2008	1.57	1.14	0.44
	2007-2009	1.40	1.18	0.22
	2008-2010	1.37	0.83	0.54
$\lvert\overline{R}\rvert$	1999-2001	1.40	1.79	0.79
(EUR	2000-2002	1.38	1.32	0.85
billions)	2001-2003	1.21	0.82	0.80
	2002-2004	1.40	0.61	1.02
	2003-2005	1.95	1.10	1.02
	2004-2006	2.15	1.22	1.13
	2005-2007	2.11	1.47	0.91
	2006-2008	1.66	1.27	0.94
	2007-2009	1.56	1.33	0.85
	2008-2010	1.54	1.11	1.11
MAPE/	1999-2001	6.46	8.09	0.83
RMSRE	2000-2002	5.80	5.53	0.62
(%)	2001-2003	4.79	3.25	0.62
	2002-2004	5.16	2.33	0.86
	2003-2005	6.77	3.96	1.04
	2004-2006	7.13	4.19	1.19
	2005-2007	6.26	4.57	1.05
	2006-2008	4.39	3.57	0.90
	2007-2009	3.97	3.70	0.73
	2008-2010	3.81	3.03	1.01
Q	1999-2001	88.57	82.86	80.00
(%)	2000-2002	91.43	88.57	77.14
	2001-2003	88.57	91.43	77.14
	2002-2004	94.29	91.43	74.29
	2003-2005	94.29	88.57	65.71
	2004-2006	88.57	94.29	68.57
	2005-2007	85.71	97.14	74.29
	2006-2008	82.86	94.29	74.29
	2007-2009	91.43	85.71	77.14
	2008-2010	91.43	85.71	77.14

Source: ECB.
Note: The MAPE is used for credits and debits and the RMSRE for net data.

Chart 3 Euro area income

(EUR billions)



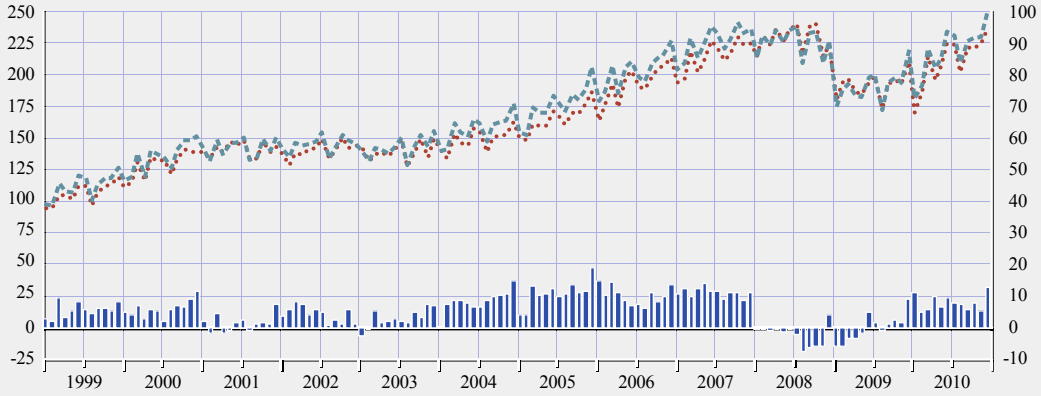
Source: ECB.

Chart 4 Euro area current account

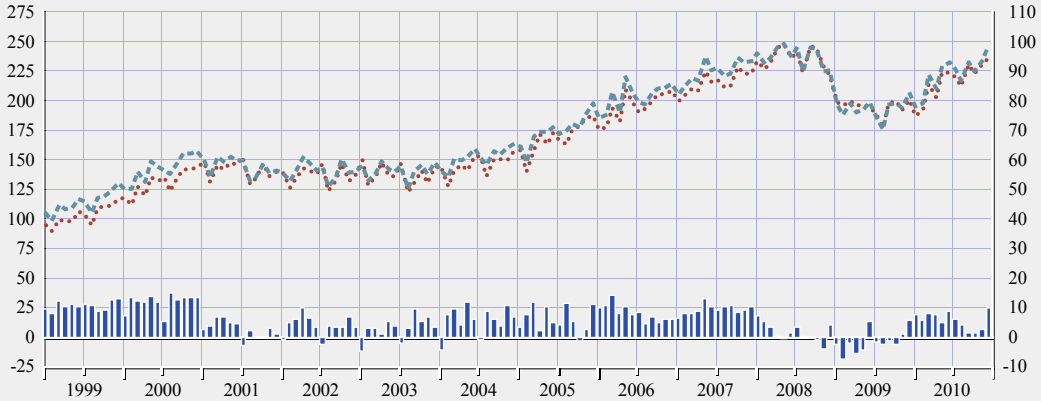
(EUR billions)

revision (right-hand scale)
first assessment (left-hand scale)
final assessment (left-hand scale)

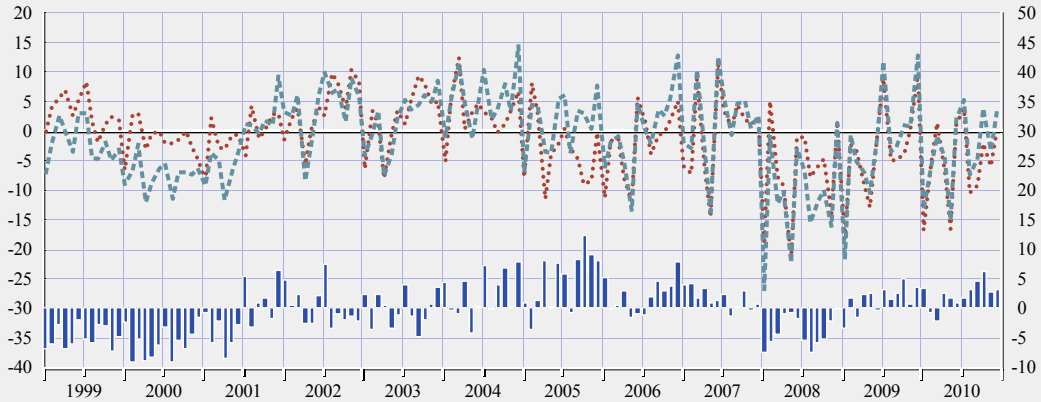
a) Credits



b) Debits



c) Net



Source: ECB.

Table 3 Stability indicators for euro area income

Quality indicator	Reference period (Jan.-Dec.)	Income		
		Credits	Debits	Net
$\overline{R}$ *(EUR billions)*	1999-2001	1.33	2.72	-1.39
	2000-2002	1.37	2.10	-0.73
	2001-2003	0.97	1.05	-0.08
	2002-2004	3.00	2.18	0.82
	2003-2005	4.97	2.48	2.48
	2004-2006	6.87	3.92	2.94
	2005-2007	7.55	4.77	2.78
	2006-2008	3.48	3.59	-0.11
	2007-2009	0.16	0.36	-0.20
	2008-2010	-0.69	-0.92	0.23
$\lvert\overline{R}\rvert$ *(EUR billions)*	1999-2001	1.91	3.36	2.29
	2000-2002	1.95	3.19	2.12
	2001-2003	1.60	2.67	2.02
	2002-2004	3.06	3.55	2.05
	2003-2005	5.02	3.79	3.16
	2004-2006	6.87	4.66	3.51
	2005-2007	7.55	5.15	3.12
	2006-2008	6.61	4.50	2.69
	2007-2009	4.99	4.12	2.40
	2008-2010	4.14	2.85	2.77
MAPE/ RMSRE *(%)*	1999-2001	9.72	16.22	1.46
	2000-2002	9.54	13.62	1.10
	2001-2003	8.16	11.40	1.02
	2002-2004	16.08	16.64	0.95
	2003-2005	23.41	16.82	1.33
	2004-2006	27.86	18.08	1.40
	2005-2007	24.45	15.13	1.15
	2006-2008	17.51	11.74	0.63
	2007-2009	11.62	9.61	0.61
	2008-2010	10.66	7.13	0.74
Q *(%)*	1999-2001	80.00	77.14	71.43
	2000-2002	80.00	80.00	74.29
	2001-2003	80.00	80.00	80.00
	2002-2004	88.57	65.71	74.29
	2003-2005	94.29	57.14	62.86
	2004-2006	91.43	65.71	57.14
	2005-2007	88.57	77.14	65.71
	2006-2008	80.00	85.71	74.29
	2007-2009	82.86	91.43	82.86
	2008-2010	85.71	97.14	85.71

Source: ECB.
Note: The MAPE is used for credits and debits and the RMSRE for net data.

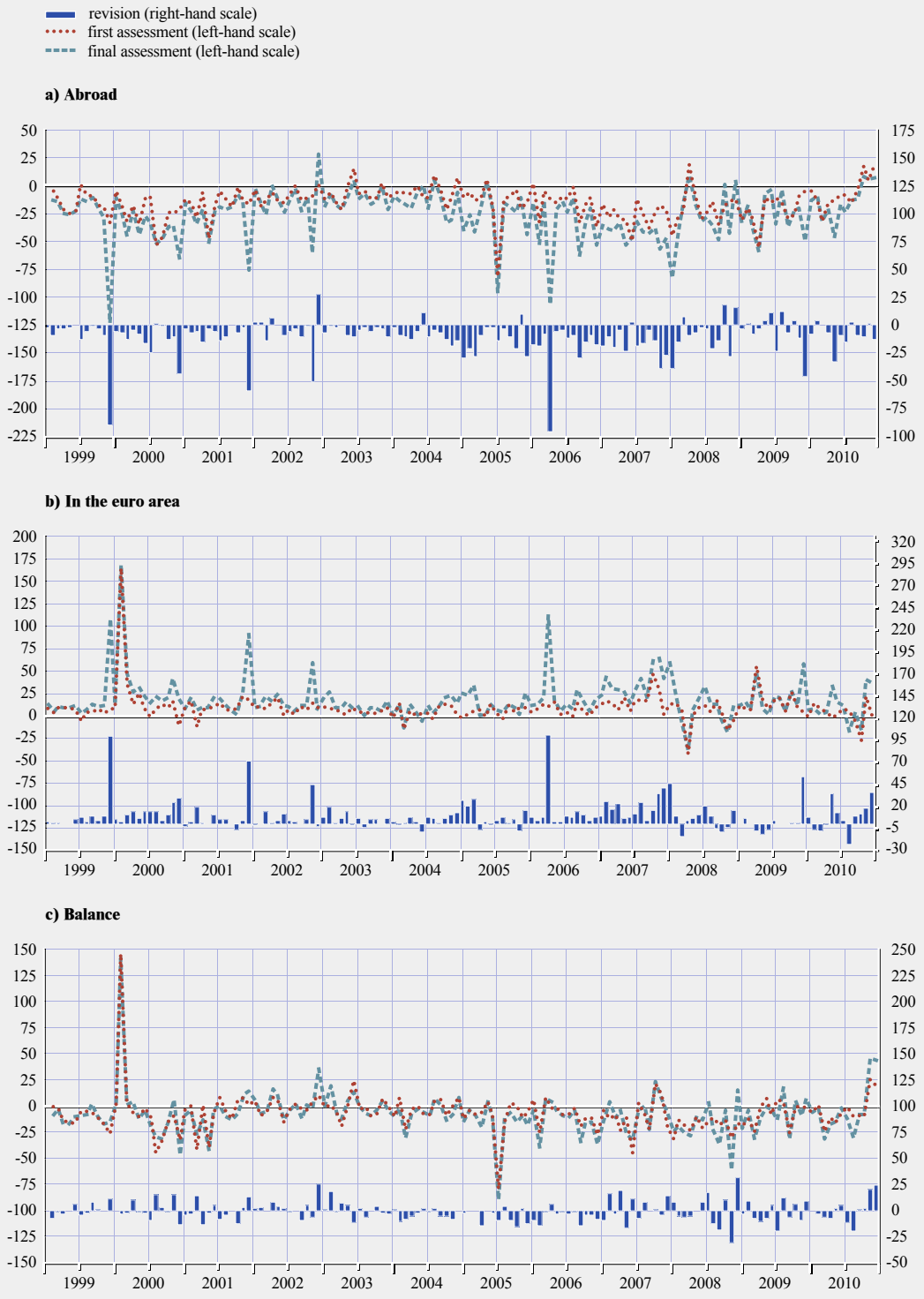
Table 4 Stability indicators for the euro area current account

Quality indicator	Reference period (Jan.-Dec.)	Current account		
		Credits	Debits	Net
$\overline{R}$ *(EUR billions)*	1999-2001	4.29	8.47	-4.18
	2000-2002	3.83	6.29	-2.46
	2001-2003	2.79	3.37	-0.58
	2002-2004	5.10	4.42	0.68
	2003-2005	7.31	5.10	2.21
	2004-2006	9.77	6.75	3.02
	2005-2007	10.69	7.93	2.76
	2006-2008	6.31	6.46	-0.15
	2007-2009	2.91	3.30	-0.38
	2008-2010	1.87	2.07	-0.20
$\lvert\overline{R}\rvert$ *(EUR billions)*	1999-2001	4.59	8.63	4.95
	2000-2002	4.12	6.64	4.17
	2001-2003	3.25	4.10	2.98
	2002-2004	5.29	5.27	2.84
	2003-2005	7.50	5.83	3.74
	2004-2006	9.78	7.10	3.85
	2005-2007	10.69	7.99	3.35
	2006-2008	8.06	6.73	2.90
	2007-2009	5.82	5.15	2.73
	2008-2010	4.78	3.92	2.97
MAPE/ RMSRE *(%)*	1999-2001	3.79	7.32	1.17
	2000-2002	3.06	5.00	0.75
	2001-2003	2.33	2.99	0.62
	2002-2004	3.66	3.80	0.70
	2003-2005	4.82	3.94	0.98
	2004-2006	5.81	4.28	0.90
	2005-2007	5.68	4.17	0.83
	2006-2008	3.95	3.26	0.42
	2007-2009	2.76	2.43	0.37
	2008-2010	2.30	1.86	0.43
Q *(%)*	1999-2001	85.71	85.71	71.43
	2000-2002	85.71	85.71	71.43
	2001-2003	88.57	94.29	68.57
	2002-2004	91.43	85.71	65.71
	2003-2005	91.43	74.29	68.57
	2004-2006	94.29	71.43	77.14
	2005-2007	97.14	82.86	85.71
	2006-2008	100.00	88.57	91.43
	2007-2009	100.00	91.43	88.57
	2008-2010	97.14	91.43	91.43

Source: ECB.
Note: The MAPE is used for credits and debits and the RMSRE for net data.

Chart 5 Euro area direct investment

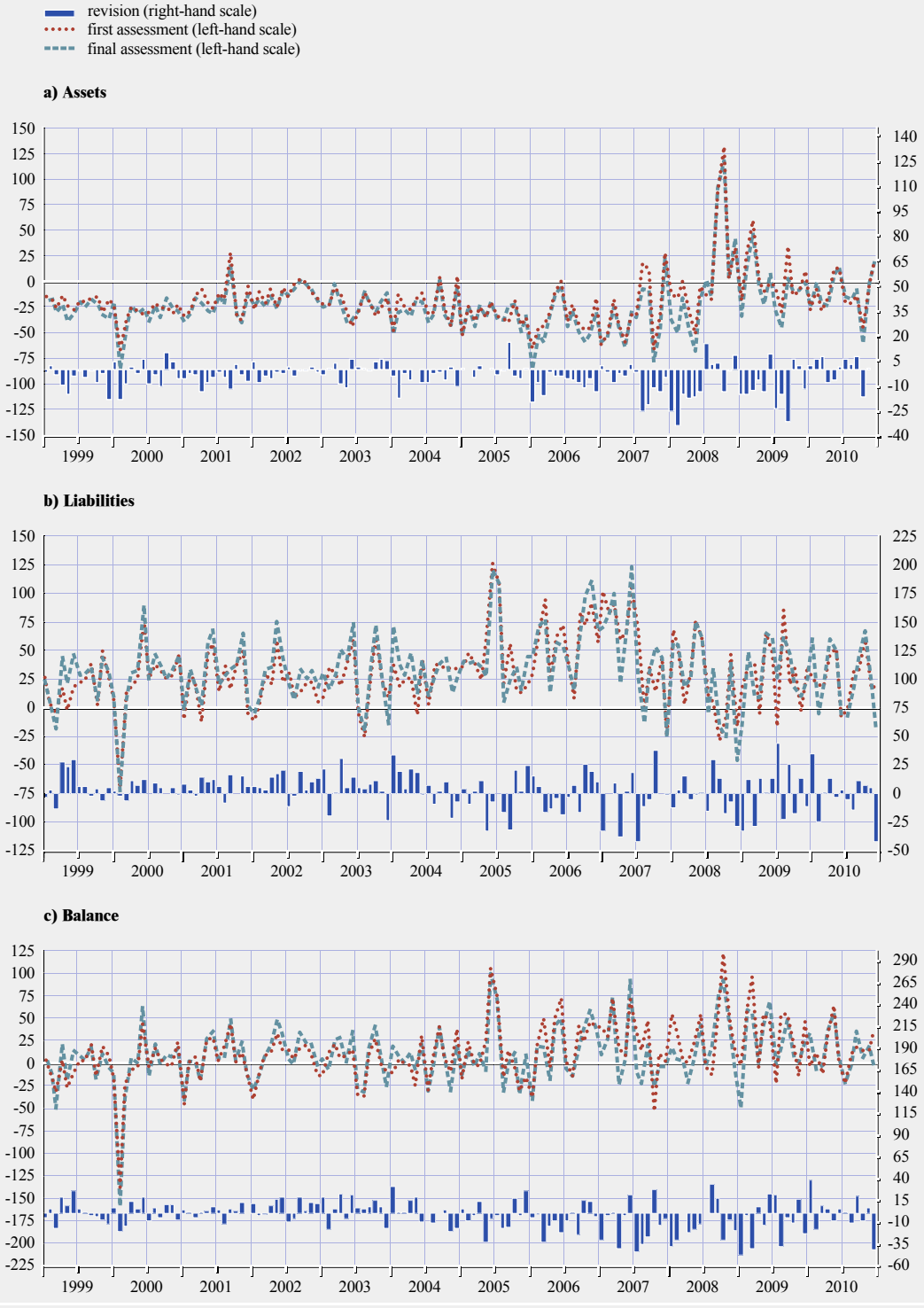
(EUR billions)



Source: ECB.

Chart 6 Euro area portfolio investment

(EUR billions)



Source: ECB.

Table 5 Stability indicators for euro area direct investment

Quality indicator	Reference period (Jan.-Dec.)	Direct investment		
		Abroad	Euro area	Net
$\overline{R}$ *(EUR billions)*	1999-2001	-11.52	11.51	-0.01
	2000-2002	-9.16	9.84	0.68
	2001-2003	-6.72	7.56	0.85
	2002-2004	-5.75	5.91	0.16
	2003-2005	-8.66	6.28	-2.37
	2004-2006	-13.79	9.36	-4.44
	2005-2007	-16.49	14.01	-2.48
	2006-2008	-14.79	13.81	-0.98
	2007-2009	-9.91	10.00	0.10
	2008-2010	-7.18	6.62	-0.55
$\lvert\overline{R}\rvert$ *(EUR billions)*	1999-2001	11.63	11.94	5.72
	2000-2002	11.37	10.42	6.33
	2001-2003	8.85	8.38	5.86
	2002-2004	8.48	6.80	4.95
	2003-2005	9.77	7.74	5.12
	2004-2006	14.90	10.58	5.42
	2005-2007	17.16	14.72	7.09
	2006-2008	17.22	15.47	9.34
	2007-2009	14.18	13.04	10.24
	2008-2010	11.76	11.67	9.95
MACE/ RMSRE *(%)*	1999-2001	0.74	0.97	0.58
	2000-2002	0.61	0.69	0.54
	2001-2003	0.44	0.49	0.70
	2002-2004	0.40	0.35	0.61
	2003-2005	0.41	0.35	0.71
	2004-2006	0.55	0.43	0.61
	2005-2007	0.56	0.54	0.68
	2006-2008	0.50	0.53	0.73
	2007-2009	0.37	0.41	0.77
	2008-2010	0.28	0.34	0.63
Q *(%)*	1999-2001	82.86	65.71	74.29
	2000-2002	82.86	71.43	82.86
	2001-2003	91.43	57.14	85.71
	2002-2004	85.71	60.00	85.71
	2003-2005	80.00	57.14	82.86
	2004-2006	77.14	74.29	82.86
	2005-2007	71.43	77.14	74.29
	2006-2008	77.14	82.86	80.00
	2007-2009	68.57	77.14	71.43
	2008-2010	74.29	68.57	77.14

Source: ECB.
Note: The MACE is used for assets and liabilities and the RMSRE for balance data.

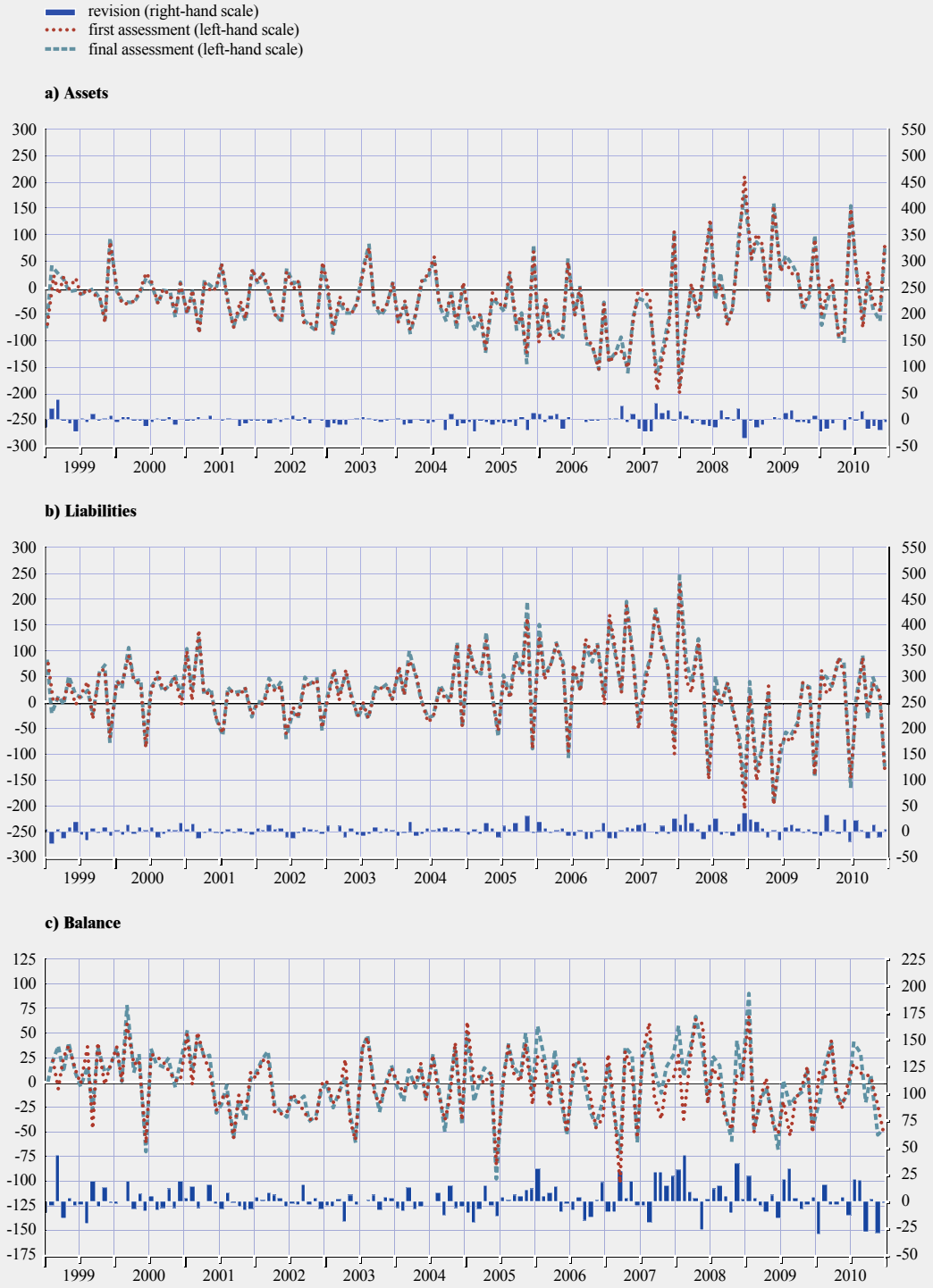
Table 6 Stability indicators for euro area portfolio investment

Quality indicator	Reference period (Jan.-Dec.)	Porfolio investment		
		Assets	Liabilities	Balance
$\overline{R}$ *(EUR billions)*	1999-2001	-4.49	5.57	1.08
	2000-2002	-3.27	6.10	2.83
	2001-2003	-2.27	6.60	4.34
	2002-2004	-2.38	6.44	4.06
	2003-2005	-1.73	2.84	1.12
	2004-2006	-4.74	1.48	-3.26
	2005-2007	-5.36	-2.38	-7.74
	2006-2008	-8.34	-2.19	-10.53
	2007-2009	-8.98	-2.21	-11.18
	2008-2010	-6.37	-0.85	-7.22
$\lvert\overline{R}\rvert$ *(EUR billions)*	1999-2001	6.18	8.12	8.04
	2000-2002	5.29	7.99	8.19
	2001-2003	4.44	10.24	8.86
	2002-2004	4.45	11.69	10.94
	2003-2005	4.48	12.76	11.87
	2004-2006	5.91	13.10	11.88
	2005-2007	6.73	14.29	15.28
	2006-2008	10.31	13.91	17.51
	2007-2009	11.91	16.11	20.22
	2008-2010	10.96	15.21	17.99
MACE/ RMSRE *(%)*	1999-2001	0.28	0.28	0.42
	2000-2002	0.22	0.25	0.41
	2001-2003	0.18	0.31	0.49
	2002-2004	0.17	0.33	0.62
	2003-2005	0.15	0.32	0.62
	2004-2006	0.17	0.28	0.58
	2005-2007	0.16	0.25	0.62
	2006-2008	0.24	0.23	0.70
	2007-2009	0.28	0.25	0.76
	2008-2010	0.26	0.23	0.80
Q *(%)*	1999-2001	74.29	94.29	85.71
	2000-2002	88.57	85.71	82.86
	2001-2003	91.43	74.29	77.14
	2002-2004	88.57	65.71	74.29
	2003-2005	85.71	65.71	74.29
	2004-2006	88.57	68.57	80.00
	2005-2007	94.29	71.43	80.00
	2006-2008	94.29	80.00	85.71
	2007-2009	97.14	80.00	85.71
	2008-2010	88.57	71.43	77.14

Source: ECB.
Note: The MACE is used for assets and liabilities and the RMSRE for balance data.

Chart 7 Euro area other investment

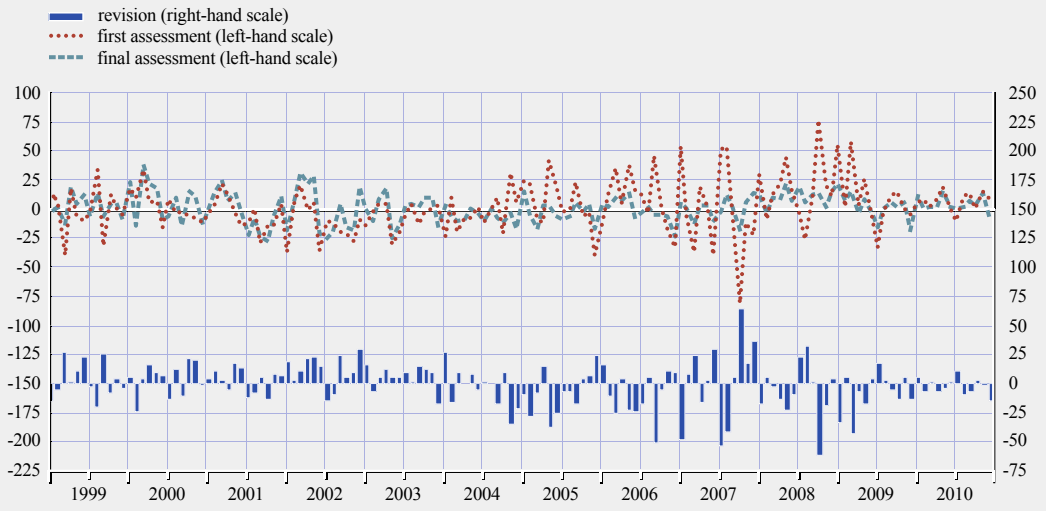
(EUR billions)



Source: ECB.

Chart 8 Euro area total financial account – net

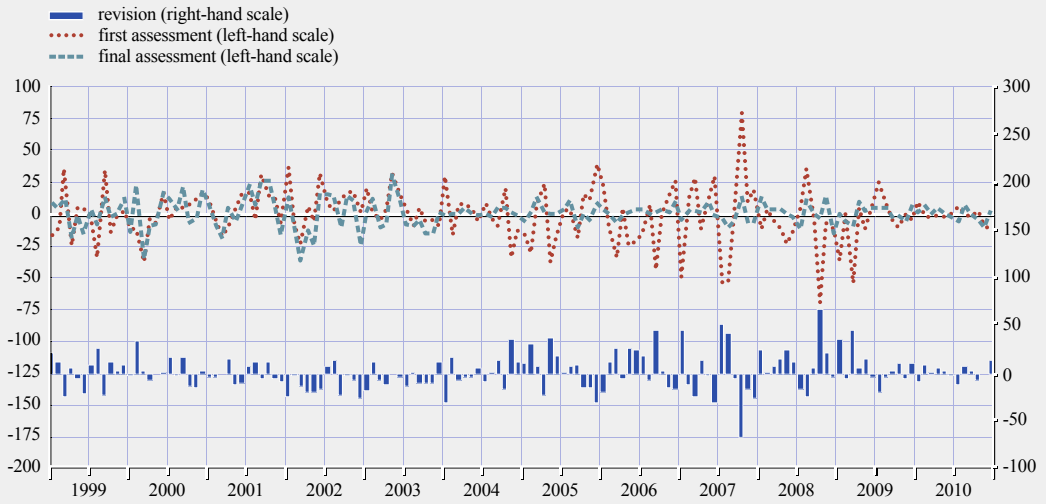
(EUR billions)



Source: ECB.

Chart 9 Euro area errors and omissions

(EUR billions)



Source: ECB.

Table 7 Stability indicators for euro area other investment

Quality indicator	Reference period (Jan.-Dec.)	Other investment		
		Assets	Liabilities	Balance
$\overline{R}$	1999-2001	0.20	1.31	1.51
(EUR	2000-2002	-0.72	2.42	1.70
billions)	2001-2003	-1.28	1.89	0.62
	2002-2004	-2.51	2.58	0.07
	2003-2005	-4.45	3.84	-0.62
	2004-2006	-3.06	3.70	0.64
	2005-2007	-0.56	4.21	3.65
	2006-2008	1.02	5.95	6.97
	2007-2009	0.69	6.90	7.59
	2008-2010	-3.06	6.75	3.69
$\lvert\overline{R}\rvert$	1999-2001	6.74	7.67	8.58
(EUR	2000-2002	4.17	6.52	6.43
billions)	2001-2003	4.29	6.13	5.41
	2002-2004	5.31	6.44	5.71
	2003-2005	7.10	7.49	6.97
	2004-2006	7.25	8.22	8.91
	2005-2007	9.69	9.44	11.82
	2006-2008	10.88	11.54	14.21
	2007-2009	11.44	12.02	14.15
	2008-2010	10.58	12.80	13.54
MACE/	1999-2001	0.31	0.30	0.42
RMSRE	2000-2002	0.17	0.23	0.26
(%)	2001-2003	0.16	0.21	0.26
	2002-2004	0.19	0.21	0.29
	2003-2005	0.22	0.22	0.31
	2004-2006	0.20	0.22	0.38
	2005-2007	0.22	0.21	0.46
	2006-2008	0.22	0.22	0.52
	2007-2009	0.22	0.22	0.49
	2008-2010	0.21	0.23	0.51
Q	1999-2001	88.57	91.43	88.57
(%)	2000-2002	94.29	91.43	82.86
	2001-2003	94.29	91.43	85.71
	2002-2004	97.14	94.29	88.57
	2003-2005	97.14	97.14	91.43
	2004-2006	97.14	100.00	91.43
	2005-2007	97.14	100.00	94.29
	2006-2008	97.14	100.00	100.00
	2007-2009	97.14	100.00	100.00
	2008-2010	94.29	97.14	91.43

Source: ECB.
Note: The MACE is used for assets and liabilities and the RMSRE for balance data.

Table 8 Stability indicators for euro area errors and omissions, and for the total financial account

Quality indicator	Reference period (Jan.-Dec.)	Errors and omissions	Total financial account
$\overline{R}$	1999-2001	1.35	2.90
(EUR	2000-2002	-3.09	5.68
billions)	2001-2003	-5.62	6.33
	2002-2004	-5.02	4.31
	2003-2005	-0.25	-1.96
	2004-2006	3.99	-6.91
	2005-2007	2.68	-5.00
	2006-2008	5.36	-4.76
	2007-2009	5.14	-4.32
	2008-2010	6.27	-5.82
$\lvert\overline{R}\rvert$	1999-2001	10.56	11.02
(EUR	2000-2002	10.70	12.00
billions)	2001-2003	10.46	11.17
	2002-2004	12.08	12.43
	2003-2005	12.96	12.57
	2004-2006	16.04	15.03
	2005-2007	21.08	20.38
	2006-2008	21.51	21.11
	2007-2009	19.95	20.05
	2008-2010	12.58	12.46
RMSRE	1999-2001	1.05	
	2000-2002	0.84	
	2001-2003	0.82	
	2002-2004	1.13	
	2003-2005	2.32	
	2004-2006	4.73	
	2005-2007	4.66	
	2006-2008	4.40	
	2007-2009	4.04	
	2008-2010	3.11	
Q	1999-2001	71.43	
(%)	2000-2002	74.29	
	2001-2003	82.86	
	2002-2004	71.43	
	2003-2005	71.43	
	2004-2006	65.71	
	2005-2007	71.43	
	2006-2008	65.71	
	2007-2009	65.71	
	2008-2010	54.29	

Source: ECB.

3 CURRENT ACCOUNT TRANSACTIONS BETWEEN THE EURO AREA AND ITS MAIN PARTNER COUNTRIES

Table 9 Current account transactions between the euro area and the United Kingdom from 2008 to 2010

(EUR billions)

Item in euro area b.o.p.	2008		2009		2010		2008		2009		2010	
	as recorded by						differences					
	Euro area	United Kingdom	Euro area	United Kingdom	Euro area	United Kingdom	Absolute	Relative (%)	Absolute	Relative (%)	Absolute	Relative (%)
Current account, balance	40.9	6.3	59.1	-11.8	54.9	-43.2	47.1	200.0	47.2	133.2	11.7	23.8
Exports to United Kingdom	472.6	384.0	385.6	272.5	407.1	273.4	88.6	20.7	113.1	34.4	133.6	39.3
Imports from United Kingdom	431.7	377.7	326.6	284.4	352.1	316.7	54.0	13.4	42.2	13.8	35.5	10.6
Goods, balance	53.2	-39.8	45.2	-32.7	44.3	-39.1	13.4	28.8	12.5	32.2	5.1	12.3
Exports to United Kingdom	231.4	159.5	185.6	125.4	206.4	146.6	71.9	36.8	60.2	38.7	59.8	33.9
Imports from United Kingdom	178.2	199.3	140.4	158.1	162.1	185.7	-21.1	-11.2	-17.8	-11.9	-23.6	-13.6
Services, balance	27.0	10.0	21.2	10.5	21.3	9.1	37.0	200.0	31.7	200.0	30.4	200.0
Exports to United Kingdom	110.4	77.1	100.3	66.5	103.9	68.3	33.3	35.6	33.8	40.5	35.6	41.3
Imports from United Kingdom	83.4	67.0	79.1	56.0	82.5	59.2	16.3	21.7	23.1	34.2	23.3	32.9
Income, balance	-41.2	40.1	-7.0	13.1	-9.3	-12.2	-1.0	2.5	6.1	60.4	-21.6	200.0
Receipts from United Kingdom	117.4	148.3	88.7	80.0	86.3	56.1	-31.0	-23.3	8.7	10.3	30.2	42.3
Expenditure in the United Kingdom	158.5	108.2	95.8	66.9	95.6	68.3	50.3	37.7	28.9	35.5	27.3	33.3
Current transfers, balance	1.8	-0.6	-0.3	-0.7	-1.3	-1.0	1.2	95.6	-1.0	200.0	-2.3	200.0
Receipts from United Kingdom	13.4	2.5	11.0	2.2	10.5	2.4	11.0	137.5	8.7	132.1	8.1	125.7
Expenditure in the United Kingdom	11.6	3.1	11.3	2.9	11.9	3.4	8.5	115.0	8.4	117.6	8.5	111.0

Sources: ECB and UK Office for National Statistics.
Note: The relative differences are calculated as the absolute value of the difference divided by the average of the absolute values of both estimates.

Table 10 Current account transactions between the euro area and the United States from 2008 to 2010

(EUR billions)

Item in euro area b.o.p.	2008		2009		2010		2008		2009		2010	
	as recorded by						differences					
	Euro area	United States	Euro area	United States	Euro area	United States	Absolute	Relative (%)	Absolute	Relative (%)	Absolute	Relative (%)
Current account, balance	-3.7	-5.4	-6.3	19.9	-6.8	1.3	-9.1	200.0	13.6	103.4	-5.5	136.4
Goods, balance	47.1	-52.9	34.5	-34.9	51.2	-50.1	-5.8	11.6	-0.4	1.2	1.1	2.1
Export to United States	191.3	191.5	155.4	153.5	182.8	184.6	-0.2	0.1	1.9	1.3	-1.8	1.0
Import from United States	144.2	138.6	120.9	118.6	131.6	134.4	5.6	3.9	2.4	2.0	-2.8	2.1
Services, balance	-17.9	15.7	-21.1	15.1	-21.3	14.9	-2.2	13.2	-6.0	32.8	-6.4	35.4
Export to United States	78.8	65.0	72.8	62.2	77.1	65.8	13.7	19.1	10.6	15.7	11.3	15.8
Import from United States	96.7	80.7	93.9	77.4	98.4	80.8	15.9	18.0	16.6	19.3	17.7	19.7
Income, balance	-30.8	36.4	-17.8	42.3	-35.4	39.3	5.5	16.5	24.6	81.7	3.9	10.4
Receipts from United States	97.9	112.7	84.3	82.9	78.6	97.3	-14.8	14.0	1.4	1.7	-18.7	21.3
Expenditure in the United States	128.8	149.1	102.1	125.2	114.0	136.6	-20.3	14.6	-23.1	20.4	-22.6	18.0
Current transfers, balance	-2.1	-4.6	-1.9	-2.7	-1.3	-2.8	-6.6	200.0	-4.6	200.0	-4.1	200.0
Capital account, balance	0.0	0.0	-1.0	0.0	-1.0	0.0	0.0	200.0	-1.0	200.0	-1.0	200.0

Sources: ECB and US Bureau of Economic Analysis.
Note: The relative differences are calculated as the absolute value of the difference divided by the average of the absolute values of both estimates.

Table 11 Current account transactions between the euro area and Japan from 2008 to 2010

(EUR billions)

Item in euro area b.o.p.	2008		2009		2010		2008		2009		2010	
	as recorded by						differences					
	Euro area	Japan	Euro area	Japan	Euro area	Japan	Absolute	Relative (%)	Absolute	Relative (%)	Absolute	Relative (%)
Current account, balance	-45.9	44.0	-35.5	30.3	-33.6	29.8	-1.8	4.1	-5.2	15.8	-3.8	12.1
Goods, balance	-22.2	18.0	-14.6	7.2	-15.6	9.2	-4.1	20.5	-7.4	67.6	-6.4	51.4
Services, balance	1.8	3.3	2.9	1.4	2.9	0.2	5.1	200.0	4.3	200.0	3.1	200.0
Income, balance	-25.7	22.8	-24.1	21.7	-21.3	20.4	-2.9	11.9	-2.4	10.4	-0.9	4.3
Current transfers, balance	0.1	-0.1	0.3	-0.1	0.4	0.0	0.1	54.1	0.3	131.0	0.4	200.0
Capital account, balance	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.2	200.0	-0.3	200.0	-0.2	200.0

Sources: ECB and Japan's Ministry of Finance.
Note: The relative differences are calculated as the absolute value of the difference divided by the average of the absolute values of both estimates.