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Executive summary

In the light of full consistency of the methodological standards in national accounts and balance of payments statistics an assessment of the consistency between the two appears justified. This paper presents the results of a recent study of consistency between the quarterly sector accounts and quarterly balance of payments statistics, and is complemented with aspects of internal consistency, which address statistical discrepancies. For better interpretation, explanations were incorporated which were available from a survey exercise in 2015 conducted by Eurostat ('the BOP/ROW survey'). It will be shown that although methodological standards are consistent, both statistics are up to now still exposed to discrepancies to some greater or lesser extent. The reasons for this rigid development is identified in the heterogeneous organisation of compilation processes in European statistics and the lack of share information and data sources at national, as well as international levels. At the same time it also can be shown that in some specific areas more coordination among national compilers actually has improved consistency. The paper further points at the conceptual differences in both statistics, which have also contributed to this situation, and which require to be addressed by international bodies for follow-up. It is concluded that a continuation of strictly autonomous compilation practices in European statistics will hamper European compilers ability to adapt to the challenges of compiling statistics in a globalised world. Further work will follow as regards the analysis of external asymmetries and their impact on national consistency.

1. Introduction

Since the new standard methodology BPM6/ESA2010 requires full consistency ([1]), an assessment of the consistency between the balance of payments (BOP) and the rest-of-the-world (ROW) account in the national accounts appears justified, in order to conclude how far these two statistics have been reconciled with each other in the course of the past year. Since September 2014 the statistical compilation practice of European BOP statistics has migrated to the new standard BPM6 ([2]), following the earlier implementation of the ESA2010 standard in national accounts statistics ([3]).

This analysis complements a survey exercise launched by Eurostat earlier in 2015 ('the BOP/ROW survey') where Member States provided explanations for their observed discrepancies, covering data from 1999 to 2013 for both the current/capital and the financial account ([4]). It wants to inform about the current state of consistency between BOP/International Investment Positions (IIP) and national accounts statistics, based on an analysis of the most recent data (January 2016). It starts with a short description of the parameters for this exercise, and hence elaborates on the subject in regard to the current/capital and the financial account. Then it concludes on the technical challenges experienced, the perceived shortcomings in the existing methodological standards, and the organisational setting of data compilation processes for the two statistics.

The analysis bases on quarterly data from the BOP current/capital and the financial account (QBOP) and the rest-of-the world account of the quarterly sector accounts (QSA). The time span of the analysis (2010-2014) was subject to the availability of time series according to the BPM6 standard. The more detailed results of this analysis were presented so far to the Working Group Balance of Payments statistics (BOPWG) in November 2015, the DMES in December 2015 and to the CMFB Plenary in January 2016.

([1]) BPM6 — Appendix 7, ESA2010 — Chapter 18.

([2]) Balance of Payments and International Investment Position Manual, 6th edition (BPM6), IMF 2009.

([3]) European System of Accounts 2010 (ESA2010).

([4]) In the BOPWG of April 2015 Eurostat reported on its preliminary findings for the current and capital account, in November 2015 for the financial account.

2. Technical assessment

2.1. Parameters of the data confrontation

The analysis bases on quarterly data from the BOP current/capital and the financial account (QBOP) and the rest-of-the world account from the quarterly sector accounts (QSA). The time span of the analysis (2010-2014) was subject to the availability of time series according to the BPM6. Currently data as per 2010 are available from all Member States. For easier interpretation all quarterly data have been annualised. The analysis focused on transaction data, but is extended on positions data in the financial account in order to develop further conclusions. The data confrontation was applied for the current/capital and the financial account of BOP separately with the corresponding items of the ROW account ([5]) directly after production date, in order to minimize vintage and revision effects ([6]). For missing data no measuring of consistency was applied ([7]). Discrepancies were measured as total absolute differences of the BOP account and the corresponding ROW item. These differences were measured for the respective EU-28 aggregates and the sum of national data, which allowed further insights on developments in Member States.

2.2. Applied principles of reconciliation

The data confrontation of the BOP accounts with the respective QSA accounts requires a clear convention on reconciling the accounts, in order to gain a common understanding of discrepancies. The nonfinancial accounts appear directly comparable. Consequently, we focused on the component accounts in both statistics, in order to identify consistency issues related to the respective accounts, which would be otherwise offset in the total accounts.

Table 1: Reconciling current/capital (BOP) and the ROW nonfinancial account (QSA)

BOP component	ROW NA item	Description
Goods	P61	Exports of goods
	P71	Imports of goods
Services	P62	Exports of services
	P72	Imports of services
Primary income	D1	Compensation of employees
	D2	Taxes on production and imports
	D3	Subsidies
	D4	Property income
Secondary income	D5	Current taxes on income & wealth
	D6	Social contributions and benefits
	D7	Other current transfers
	D8	Adjustment for the change in pension entitlements
Capital account	D9	Capital transfers
	NP	Acquisition less disposal of nonfinancial non-produced assets

BOP and NA items according to BPM6 and ESA2010.

For the financial account we encountered conceptual differences which put an additional strain on the correct selection of BOP breakdown data. ESA2010, Table 18.14 ([8]) depicts the possible reconciliation between the functional categories of BPM6 and financial instrument categories of ESA2010. Table 2 illustrates the differences in concepts between the two standards in a simplified form, which requires breakdowns by financial instrument for each of the functional categories of the BOP financial account, in

([5]) Emphasising the sign convention of the ROW account.

([6]) With revision effects having either a smoothening or escalating impact on the measured discrepancies.

([7]) Missing data occurred in particular for Luxembourg in the QSA on data referring to the primary and secondary income, as well as the capital account. To a lesser extent gaps applied also to data from Malta (secondary income account).

([8]) Also: Table 26.6 (SNA2008).

order to provide for meaningful comparisons with the ROW equivalent item. We had to conclude that either these breakdowns exist but are not part of the regular reporting requirements ([9]), or they do not exist at all in the standard representation of BPM6 ([10]). As a consequence data confrontations for the financial accounts between the two concepts have to be based on the available data sets and restricted to their total net values ([11]), as they cannot be fully reconciled in the component accounts. It should however be noted that Member State compilers have access to the required breakdowns, and such comparisons should be possible at national levels.

Table 2: Reconciling ROW financial account (QSA) and financial account (BOP) ([12])

NA item / BOP component		DI	PI	FD	OI	RA
Monetary gold and SDRs	F.1				x	x
Currency and deposits	F.2	x			x	x
Debt securities	F.3	x	x			x
Loans	F.4	x			x	x
Equity	F.5	x	x		x	x
Insurance	F.6	x			x	
Financial derivatives	F.7			x		x
Trade credits and other accounts	F.8	x			x	

Simplified version for illustration purposes — Source: ESA2010, Table 18.14.

We would like to illustrate this with the composite character of the BOP component direct investment. BPM6 focuses most prominently on establishing statistical representation of chains of ownership and control in direct investment transactions, while the aspect of consistency with ESA2010 appears of minor importance. The current version of the BPM only specifies breakdowns by equity/investment funds shares (F.5) and debt instruments, with the latter even leading to further complications. According to the BPM6, **direct investment debt instruments** (in BPM5: other capital) consist of operations in SDRs, currency and deposits, debt securities, loans (incl. intercompany loans), insurance technical reserves, etc. (BPM6, paragraph 5.31). The composite character of debt instruments recorded under direct investment (FL) in BPM6 consequently does not allow for a straightforward comparison with the ROW components F.3 (Debt securities) or F.4 (Loans), or any other item for that sake, unless the required breakdowns into the respective components were available. A similar reasoning would apply to **reserve assets**. They consist of operations in monetary gold, SDRs, currency and deposits (incl. interbank positions), debt securities, loans, equities/investment fund shares and financial derivatives, which prevent straightforward comparison with the national accounts. Due to the different objectives in both statistics, the concepts of direct investment and reserve assets do not explicitly exist in NA. As a consequence data confrontations would exaggerate discrepancies and cannot lead to meaningful conclusions.

Trade credits and advances and **insurances technical reserves** are both components of direct investment according to ESA2010 (Table 18.14), which are explicitly not represented in the BPM6 standard representation. The standard presentation of BPM6-Appendix 9 omitted some subcomponents of direct investment, while focusing on financial transactions in equity/investment fund shares and debt instruments, and their breakdowns by chains of control and ownership. As a consequence, the presentation of BPM6 appears not fully comparable to ESA2010.

([9]) Specified in the BOP Vademecum, Update February 2016.

([10]) BPM6, Appendix 9.

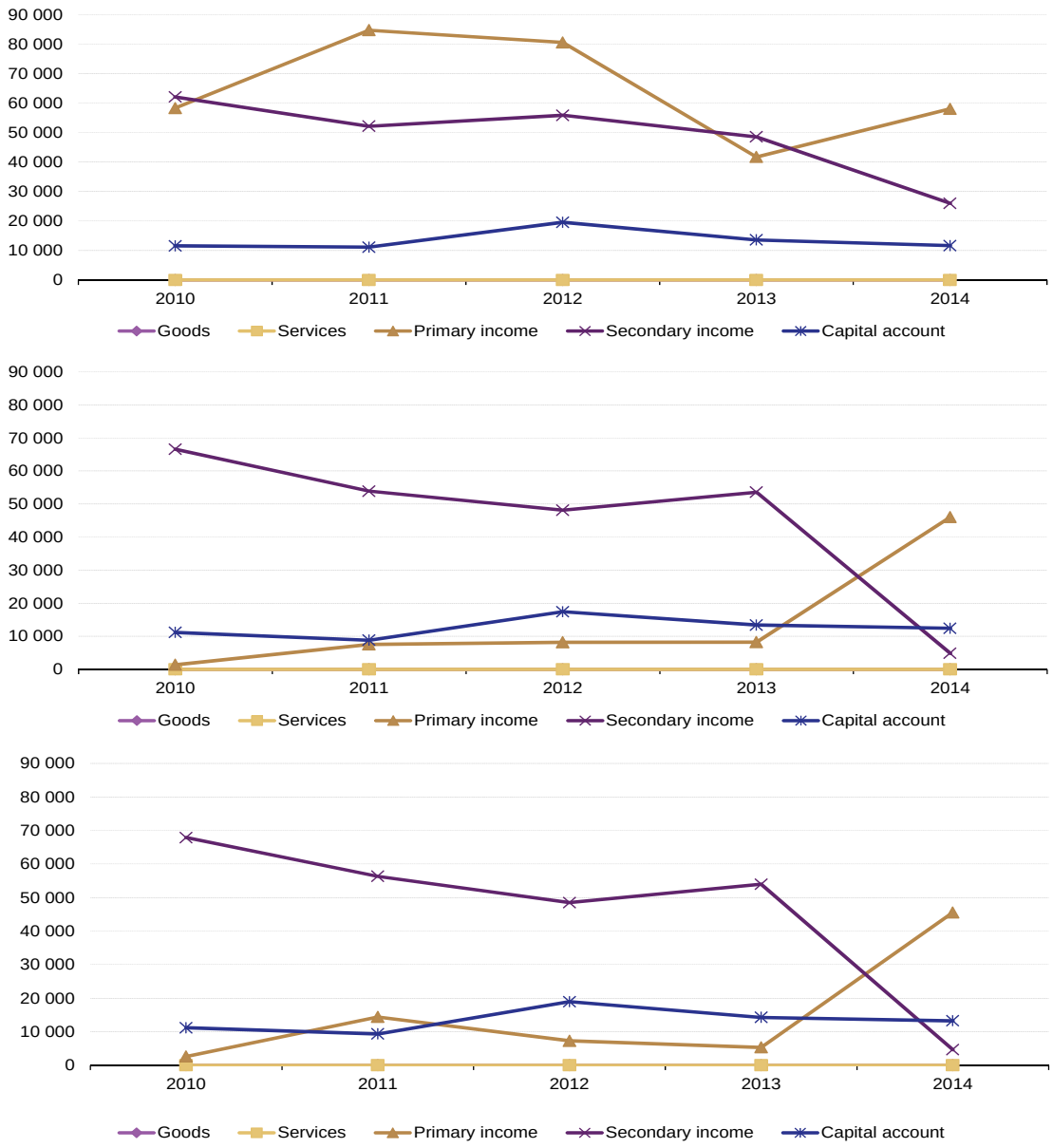
([11]) Financial account net lending/borrowing (BOP/IIP) and ROW net acquisition of assets/net incurrence of liabilities (QSA).

([12]) DI=Direct investment, PI=Portfolio investment, FD=Financial derivatives, OI=Other investment, RA=Reserve assets.

2.3. Levels of discrepancy in a multiannual context

Eurostat compiles the corresponding aggregates in BOP and ROW for the EU-28 current and capital accounts. A look at the corresponding component accounts for the EU-28 reveal full consistency in the goods and services account ([13]), declining discrepancies in the secondary income and capital account and some escalation in the most recent production year for the primary income account.

Figure 1: Discrepancies in the EU-28 current/capital account, EU-28 aggregate, 2010-2014 — Comparing the vintages of July 2015, October 2015 and January 2016 (million EUR)



Discrepancies for July 2015 in upper, for October 2015 in central, and for January 2016 in lower figure. Line for Goods and Services overlap with a zero value for the entire period, representing full consistency.

Source: Eurostat

([13]) The respective data from BOP are used by Eurostat for the compilation of the EU-28 aggregate in QSA.

Given the different production calendars a bias for revision and vintage effects can never be completely excluded, which we tried to avoid as much as possible by carefully choosing the comparable vintages from the January production.
Comparing discrepancies applying to the available vintages it can be further concluded that revisions particularly relating to the primary income account have contributed to more consistency of the respective items (shown by a downward shift in levels of discrepancies for back data). This supports the assumption that discrepancies in the course of the year are subject to cyclical effects, which culminate in improved levels of consistency, once more comprehensive data become available to the compiler, and results from previous estimations can be replaced with more relevant data ([14]).

For 2014 about EUR 63.4 billion were measured in absolute differences for the EU-28 current/capital account ([15]), which compare to EUR 73.6 billion for the previous years. Total levels of discrepancies remain stable but elevated at an annual average of EUR 74.7 billion over the 5-years period. In comparison, the sum of discrepancies occurring to the current/capital account in national data for the 28 Member States amounted to EUR 297.4 billion in 2014 (EUR 234.2 billion in 2013). This illustrates the limited scope of interpretation of discrepancies occurring on aggregate data, as offsetting effects occur at EU-28 level. Hence, an analysis of national data allows better insights into the nature of discrepancies resulting from Member States' compilation processes.

Table 3: Absolute exposure to discrepancies, sum of national data, current/capital account, by BOP item, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
Total	**187 311**	**205 528**	**222 083**	**234 211**	**297 436**
% of GDP	**1.5**	**1.6**	**1.7**	**1.7**	**2.1**
Goods	28 201	27 788	37 074	39 929	35 214
Services	70 814	73 030	78 544	80 394	101 461
Primary income	43 031	47 321	37 102	52 868	106 298
Secondary income	34 524	41 635	57 084	49 333	40 025
Capital account	10 742	15 755	12 278	11 687	14 439

Discrepancies = absolute differences BOP minus ROW items in gross transactions, for capital account net transactions.

Source: Eurostat

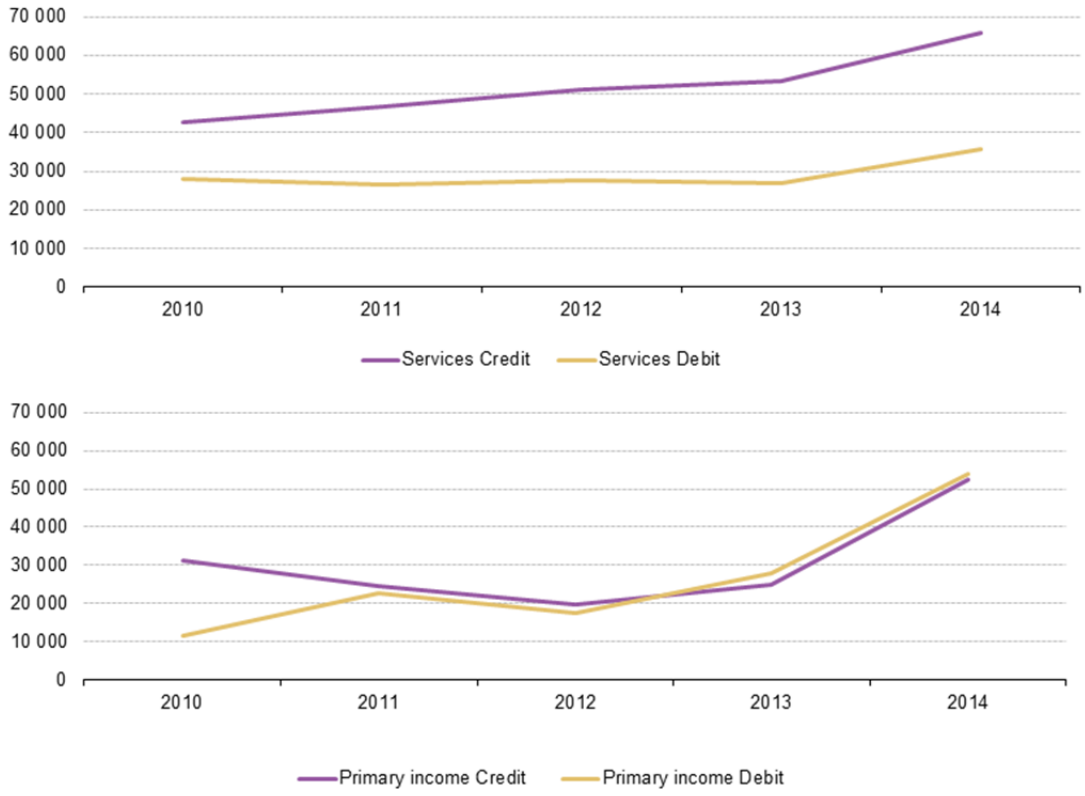
Levels of discrepancies in Member States' current accounts have almost reached the EUR 300 billion mark in 2014. In general, levels appear elevated although the structure of discrepancies has changed over the 5-years period. The major contributor has been the services account, but has been overtaken by the primary income account in 2014 in explaining discrepancies in Member States' nonfinancial accounts. On the other end, the encouraging development in the goods, the secondary income and capital account is confirmed also from national data. Particularly the most recent data revision which we received in January has contributed to this trend. While we would expect future revision practice to 'smoothen' discrepancies occurring to the more recent observations of 2014, the persistently elevated levels of discrepancies in a multiannual context appear however remarkable — particularly in the light of full consistency of the methodological standards.

In absolute terms the services and primary income accounts appear to be most affected by discrepancies. While services showed a discrepancy of EUR 101.5 billion in 2014 (EUR 80.4 billion in 2013), primary income went up to EUR 106.3 billion in discrepancies (from only EUR 52.9 billion in 2013), referring together to 65% of total discrepancies in 2014. The patterns of inconsistency in these two accounts appear however very different — while the primary income account shows elevated levels of discrepancies both for credit and debit flows, in the services account debit flows seem less exposed to discrepancies than credit flows (e.g. relating to exports of financial services). This can be also shown in relative terms.

([14]) This assumption is based on the principle that national compilers tend to maintain their own estimations as far as no concise data are available from data collection systems. This is particularly relevant in the compilation of the primary income account, but applies also more generally.

([15]) Discrepancies for the current/capital account are the sum of discrepancies occurring in the respective component accounts.

Figure 2: Discrepancies in the services and primary income accounts, sum of national data, 2010-2014
(million EUR)



Discrepancies=differences BOP minus ROW items

Source: Eurostat

Relative to the annual transactions in the respective component accounts, exposure to discrepancies appears relatively important in the capital ([16]) and to a lesser extent the secondary income account. This is due to the smaller transaction volumes applying to these two components. For services the relative exposure amounted to 4.0% of annual credit flows and 2.5% of annual debit flows in 2014, while for the primary income account the relative exposure was applying to credit and debit flows equally. Relative exposure for all Member States assumed 3.8% of annual credit flows and 3.9% of annual debit flows respectively in 2014 in the primary income account. For goods it can be concluded that the relative exposure appears minor, given the high volumes of average transactions in this component.

([16]) In order to exclude a bias arising from the applied net recording of transactions in QSA for the component acquisition less disposals of non-produced nonfinancial assets (NP) discrepancies had been measured on net transactions in the capital account.

Table 4: Relative exposure to discrepancies, sum of national data, current/capital account, by BOP item, 2010-2014
(% of annual transactions)

	2010	2011	2012	2013	2014
Goods - Credits	0.5	0.4	0.4	0.5	0.5
Goods - Debits	0.3	0.3	0.5	0.5	0.3
Services - Credits	3.3	3.4	3.5	3.4	4.0
Services - Debits	2.5	2.2	2.2	2.0	2.5
Primary income - Credits	2.4	1.7	1.4	1.8	3.8
Primary income - Debits	1.0	1.8	1.3	2.1	3.9
Secondary income - Credits	12.0	11.0	13.8	12.3	9.9
Secondary income - Debits	4.2	6.0	7.9	6.1	4.9
Capital account - Net	26.6	35.7	23.4	21.4	30.2

Total discrepancies by credits and debits relating to average annual transactions.

Source: Eurostat

For the financial account the sum of national data in total absolute discrepancies of net financial account transactions (BOP) amounted to EUR 461.8 billion in 2014 (EUR 176.5 billion in 2013), remaining at elevated levels over the 5-years period as well ([17]). Financial account discrepancies were oscillating above the EUR 200 billion mark over the 5-years period, showing outliers in 2013 and 2014 ([18]). A similar situation is observed for total positions in the international investment position (IIP) but at expectedly higher levels, where EUR 671.5 billion were measured in discrepancies in 2014 at constantly elevated levels in a multiannual context (EUR 808.7 billion in 2013) ([19]).

Table 5: Financial account discrepancies, sum of national data, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
Transactions (BOP/ROW), net	298 490	219 507	277 924	176 489	461 797
In % of GDP	2.3	1.7	2.1	1.3	3.3
Positions (IIP/ROW), net	1 242 724	1 054 859	518 304	808 650	671 465
In % of GDP	9.7	8.0	3.9	6.0	4.8

Discrepancies=differences BOP/IIP net lending/borrowing (financial account; net=assets-liabilities) minus net acquisition of assets/net incurrence of liabilities (ROW account; net=liabilities-assets)

Source: Eurostat

Contagion effect of the financial account

Compilation processes of financial account statistics in BOP are usually based on positions data (IIP/financial balance sheets), from which financial transactions (BOP) are derived under consideration of price/foreign exchange effects and other changes. As financial account positions are used by compilers for their estimations on income and FISIM, inconsistencies effectively can transmit into the current account/nonfinancial ROW account via these estimations being based on inconsistent positions data. Consequently, a contagion effect of the IIP/financial balance sheets applies implicitly, transmitting inconsistencies not only into the BOP/ROW financial account (stock-flow inconsistencies) but also the current account/ROW nonfinancial account. This gives a new dimension to the analysis of discrepancies, where not only item exposure, the use of different estimation practices or data sources, but also a

([17]) Comparing net lending/net borrowing in the BOP financial account with net acquisition of assets/net incurrence of liabilities in the ROW account.

([18]) Germany and Ireland contributed to this with an unexpectedly high discrepancy of 197.9 billion and 140.4 billion EUR respectively due to outlier values in the corresponding ROW data. Germany explains these measured differences by the specific needs of the respective statistical domains. While the sector accounts primarily focus on compiling sound data for the domestic sectors, BOP concentrates on external relationships. Initiatives to address the observed discrepancies and differences in source data will be reinforced in Germany, once BPM6/ESA2010 production processes have been stabilised. This will also entail a closer cooperation between the national counterparts.

([19]) Missing data in QSA were replaced by corresponding net values from the Annual Sector Accounts. This could have somewhat blurred the analysis by vintage effects. Missing financial data occurred in Bulgaria and 9 countries with missing values for 2010 and 2011 (Czech Republic, Denmark, Ireland, Greece, Croatia, Italy, Cyprus, Romania, Slovakia).

contagion effect arising from internal inconsistencies becomes relevant. Aspects of internal consistency will be added further below.

2.4. Reasons for discrepancies according to the BOP/ROW survey

In order to obtain a better understanding of the nature of discrepancies in general, we will resort to the explanations given by Member States in the earlier mentioned BOP/ROW survey. This helps to identify the major parameters which explain statistical inconsistencies in the current data comparison.

Uncoordinated compilation practices and the inconsistent use of data sources are the most common reasons for discrepancies

30.1% of all explained discrepancies occurring in the current/capital account were attributed by Member States to the use of different compilation practices and data sources in the compiling economy. Although not necessarily of homogenous character, this clearly is the major contributing factor to inconsistency in the two statistics.

Table 6: Explained discrepancies by stated reason, current account (% of total)

Reason of discrepancy	%
Different compilation practices (unspecified)	30.1
Different data sources	14.0
Vintage and revision differences	13.1
Reclassification Services and Goods	9.9
FISIM allocation	6.6
Differences property income	6.3
Transit trade (natural gas)	4.8
Errors detected	4.8
Balancing of accounts	3.3
Illegal economy	1.8
CIF-FOB adjustment	1.6
Differences compensation of employees	0.7
Other	3.1

BOP/ROW survey
Source: Eurostat

Inconsistent compilation practices applied predominantly to the primary income account. The compilation of its major component property income, and to a lesser extent compensation of employees, seems to be hardly coordinated. While some Member States remained unspecific, where the inconsistency applies, others explicitly attributed the observed differences to specific components in the primary income account (i.e. property income or compensation of employees). Compilation problems for property income are commonly known when it comes to estimating income flows generated from resident investments abroad and computing a breakdown in distributed and reinvested cross-border income flows (e.g. income distributed and reinvested from shares held by residents in non-resident mutual funds). Similar information asymmetries apply to compilers, when estimating compensation of employees in border or seasonal work contracts (e.g. residents working abroad or unregistered/illegal work by non-residents in domestic labour markets). Different approaches and parallel estimation practice could result in coordination issues among national counterparts. Further, the **use of different data sources** in the computation of the two statistics appears relevant.

Other common reasons for discrepancies in the current/capital account

Furthermore, the survey specifies more common reasons, although with less quantitative impact than the previously mentioned. The **uncoordinated reclassification practice between the goods and services account (or vice versa)** occurred in the wake of the new compilation methodology (e.g. goods under merchanting, goods for processing), and the **inconsistent allocation of FISIM.** It applies to the services

account (where FISIM is registered ([20])) and concerns especially Luxembourg and Greece. The main known problems lie in the calculation of sector-specific reference rates for loans and deposits which are negotiated with the resident financial sector outside the regulated banking system (e.g. financial leasing), and in the availability of external reference rates, where information on sector-specific interest rates appears difficult to obtain. These difficulties could have resulted in coordination problems among national counterparts.

Regarding the required practice of **CIF/FOB adjustments** Eurostat has assumed bilateral contacts with the concerned Member States. Sweden in particular seemed to be effected by this shortcoming.

Vintage and revision differences arise from the different production cycles in NA and BOP. A careful choice of vintages and better synchronisation of production cycles (including revisions) could minimise, but never neutralise these effects. This clearly refers to the need to put more emphasis on the correct implementation of the harmonised EU revision policy for NA and BOP, in order to support better comparability ([21]).

Discrepancies in the financial account

Although we were facing main challenges in analysing financial transactions due to the above mentioned conceptual differences in both statistics, resorting to the explanations received from Member States in the BOP/ROW survey could be helpful to attain a better understanding of patterns applying to the financial account. Beside the already mentioned different compilation practices which clearly also apply to the financial account (21.0% of all explained differences) different net recording practices in regard to financial derivatives were mentioned as the most prominent contributing factor to inconsistencies (36.6% of all explained differences). Of particular interest appear the different net recording practices for financial derivatives in both statistics.

Table 7: Explained discrepancies by stated reason, financial account (% of total)

Reason of discrepancy	%
Net recording (financial derivatives)	36.6
Vintage and revision differences	22.8
Different compilation practices (unspecified)	21.0
Different concepts (direct investment, reserve assets)	7.7
Different data sources	5.9
Other	5.9

BOP/ROW survey 2015

Source: Eurostat

Net recording of financial derivatives in BOP

While the ROW account shows assets and liabilities (F.7) according to the balance sheet approach, the BOP financial account records only net values (assets minus liabilities). The reason for this lies in the interpretation of BPM6, paragraphs 8.7 on net recording, and 8.34 on financial derivatives in specific. While generally changes in financial assets should not be netted against changes in liabilities, the BPM6 allows an exception from this rule for financial derivatives, wherever gross recording is impractical. This should however lead to comparable net values, when abstracting from financial derivatives in reserve assets ([22]). We measured EUR 69.4 billion in absolute discrepancies for 2014 (EUR 24.2 billion in 2013). While only Germany and Ireland showed outliers (EUR 43.9 billion, and EUR 10.6 billion respectively), all other Member States recorded minor discrepancies ([23]). In some Member States there is possibly some

([20]) 'In BPM6, interest flows are measured on exactly the same basis as in the SNA with FISIM separated and treated as an import or export of financial services.' (SNA2008, paragraph 26.60).

([21]) While QBOP is compiled at t+85 days, comparable data in QSA refer to a more heterogeneous production calendar — euro area countries produce at t+85 days, all other Member States at t+3 months.

([22]) We assume financial derivatives of minor importance in reserve assets. Thus, a comparison of the respective items in BOP and national accounts appears justified and comparable.

([23]) Among those, France showed full consistency in 2014, and the United Kingdom, which appears highly exposed to this financial instrument category recorded only minor differences (EUR 1.2 billion).

confusion about the applied sign convention in recording assets and liabilities in the ROW account, which is illustrated by opposite signs in the respective net values. Any clarifications on the latter are subject to the provisions of SNA2008, paragraph 26.10 in regard to the sign convention of the ROW account ([24]). However, as BOP data are generally only available in net values, it appears difficult to identify the compiler where this presumed confusion originates from.

Table 8: Net financial derivatives, by country showing opposite signs, 2014 (million EUR)

	BOP	ROW
Germany	31 783	-12 101
Italy	-3 581	1 553
Greece	373	-338
Slovenia	-2	4

This comparison excludes reserve assets components

Source: Eurostat

The consistency impact of methodological conventions for deposits and loans

Discrepancies in the **treatment of deposits and loans of deposit-taking corporations** illustrate the impact of international conventions on the data comparability. As a consistent recording of deposits and loans is not always possible, BPM6 provides a convention how to treat asset and liability positions of deposit-taking corporations with other entities, i.e. nonbanks (BPM6, paragraph 5.40) and between deposit-taking corporations (BPM6, paragraph 5.42 on interbank positions). According to this, asset positions of deposit-taking corporations with nonbanks should be considered as loans by both, and liability positions as deposits by both. ESA2010 limits the extent of this convention however to short-term transactions (ESA2010, paragraph 5.118) ([25]). This situation results in discrepancies when comparing items for Deposits (F.2) and Loans (F.4) in the QSA ([26]).

2.5. The geographical representation of discrepancies

Current and capital account

A geographical breakdown of discrepancies occurring in the **current/capital account** show a high concentration around a group of only 3 countries with France as the major contributor (35.2% of total discrepancies), the Netherlands (12.4%) and Germany (8.1%), covering altogether 56% of total observed discrepancies in the current and capital account in 2010-2014 ([27]). A comparison of the multiannual mean discrepancies in the specific component accounts clearly shows the different exposure of countries. While in France and Luxembourg discrepancies particularly apply to the services account, the Netherlands show an exposure in the primary income account. Discrepancies in the goods account appear of minor significance in all countries ([28]).

([24]) '…the rest of the world is drawn up from the perspective of the rest of the world. BPM6 looks at the same stocks and flows from the point of view of the domestic economy. Thus the BPM6 entries are the mirror image of the SNA entries relating to the rest of the world.' (SNA2008, paragraph 26.10).

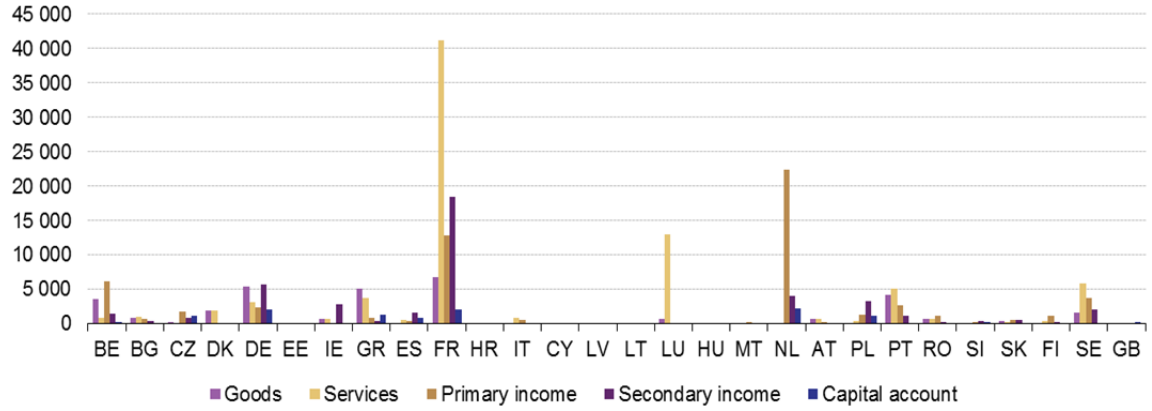
([25]) Operations in interbank positions however are treated consistently in BPM6 and ESA2010 (paragraph 5.119).

([26]) For euro area compilers the ECB provides explicitly a convention for the treatment of money market funds. See ECB, BOP Booklet (2015), Chapter 7.1.7.

([27]) Mean annual discrepancies 2010-2014: France EUR 81.4 billion, Netherlands EUR 28.6 billion, Germany EUR 18.6 billion.

([28]) Discrepancies in the goods account are also determined by the respective economy's exposure to goods under merchanting. As net recording of merchanting applies to export transactions in BOP, a comparison with mirror data from QSA could overestimate the measured discrepancies. As a consequence the presented data may contain a bias due to merchanting.

Figure 3a: Mean annual discrepancies, current/capital account, by Member State, 2010-2014
(million EUR)

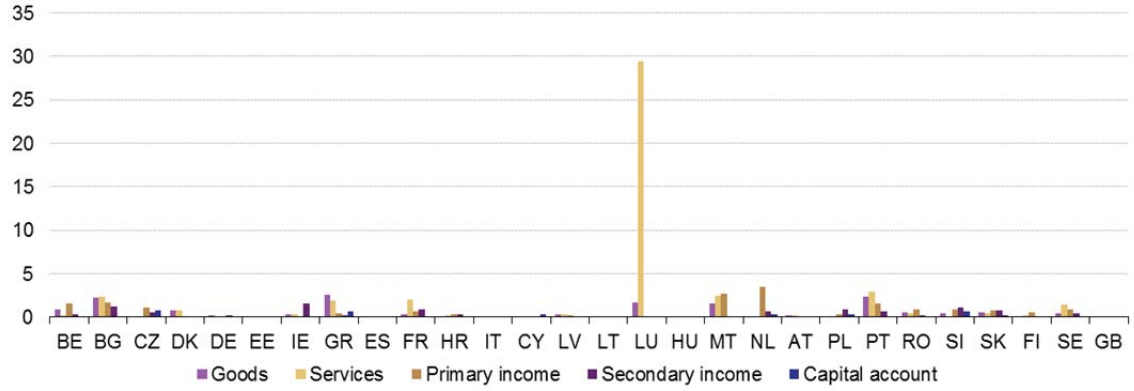


Absolute discrepancies=differences BOP minus ROW items

Source: Eurostat

In relative terms, the highest exposure to discrepancies in the current/capital account in relation to their GDP was observed in Luxembourg for services (29.5%) and the Netherlands for primary income (3.5%).

Figure 3b: Mean annual discrepancies, current/capital account, by Member State, 2010-2014
(% of GDP)



Relative discrepancies= absolute discrepancies in % of GDP (mean 2010-2014)

Source: Eurostat

Financial account

In the financial account the current data confrontation revealed at least 5 Member States appearing as a source of prominent discrepancies, adding up to around 72% of observed discrepancies. Most prominently Germany showed EUR 70.0 billion in mean annual discrepancies during the 5-years period ([29]), followed by the United Kingdom (EUR 61.2 billion) ([30]), Ireland (EUR 28.5 billion), France (EUR 28.4 billion) and Italy (EUR 19.4 billion).
In relative terms, the highest exposure to discrepancies in relation to their GDP was observed in Ireland (16.1%), Cyprus (11.2%) ([31]), Malta (8.1%) and Luxembourg (8.0%).

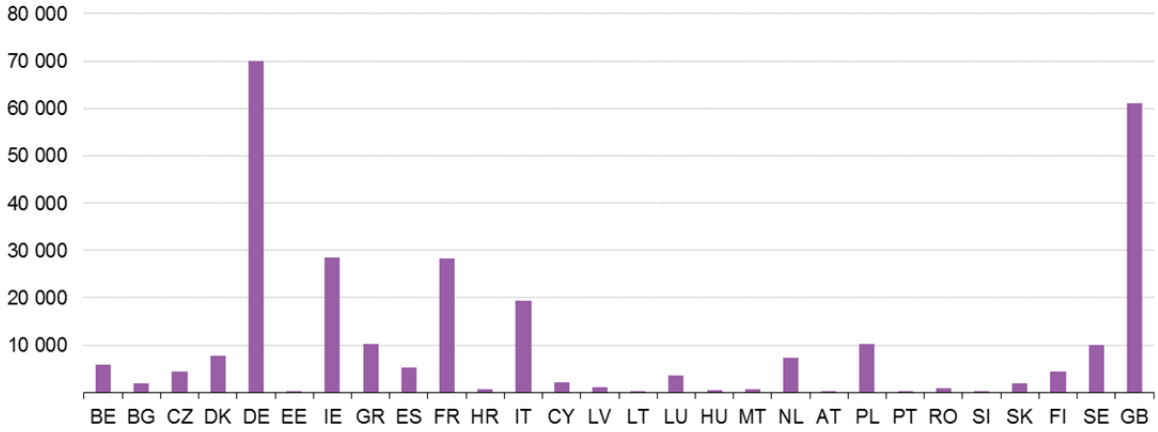
([29]) Particularly based on an outlier in the respective QSA figures for 2014.

([30]) British BOP data were reported to Eurostat as non-publishable due to quality reservations. This could have led to discrepancies with the corresponding ROW data.

([31]) In the case of Cyprus inconsistencies have been identified and are expected to be rectified in the next transmission to the quarterly financial accounts in March 2016.

Unfortunately, we are not in position to trace these discrepancies down to the component accounts for the time being, in order to get a better understanding of these inconsistencies, as explained earlier.

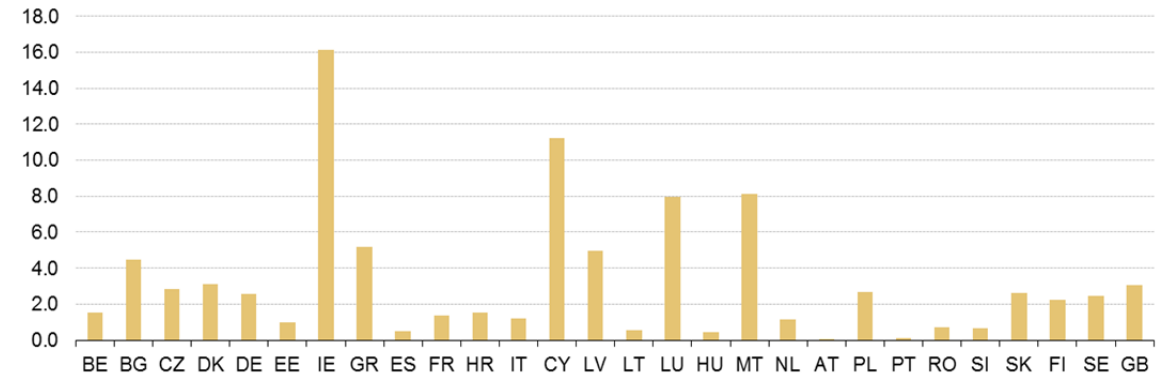
Figure 4a: Mean absolute discrepancies, total financial account, by Member State, 2010-2014
(million EUR)



Absolute discrepancies=differences BOP minus ROW items. Comparing net lending/net borrowing in the BOP financial account with net acquisition of assets/net incurrence of liabilities in the ROW account

Source: Eurostat

Figure 4b: Mean relative discrepancies, total financial account, by Member State, 2010-2014
(% of GDP)



Discrepancies=differences BOP minus ROW items. Comparing net lending/net borrowing in the BOP financial account with net acquisition of assets/net incurrence of liabilities in the ROW account.

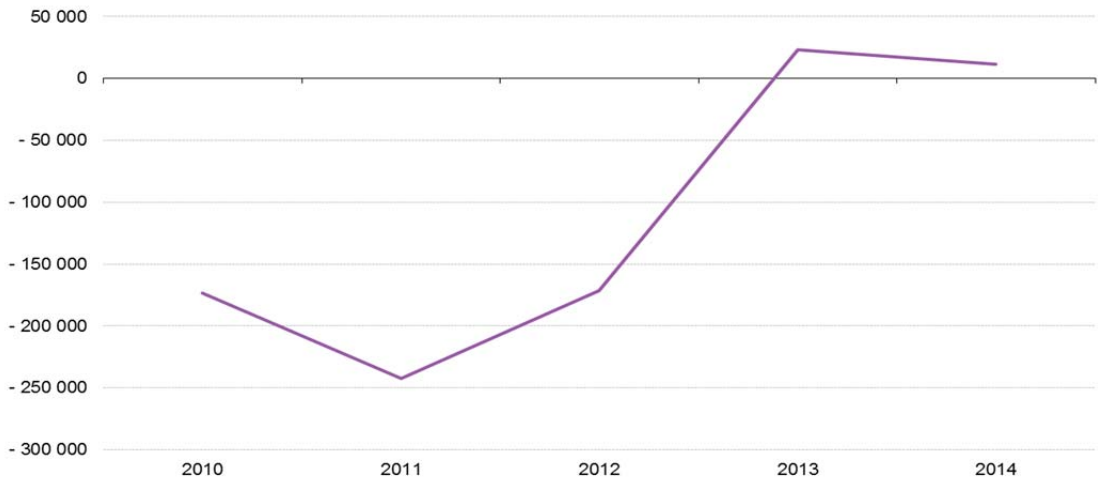
Source: Eurostat

2.6. Aspects of internal consistency — Errors and omissions in BOP statistics

Internal consistency measures provide a picture about systemic discrepancies arising from each statistics autonomously, before being compared with each other. The focus is hereby on discrepancies which contravene the accounting framework of balances and accounts in each statistics. Internally consistent statistics would be the ideal starting base for comparisons between different statistics, in order to neutralise potential contagion effects which would be imported into the analysis of external consistency. Unfortunately this is rarely the case in practice. Therefore it appears justified to incorporate aspects of

internal consistency into this analysis as well. A prominent measure for internal consistency is the analysis of the residual item net errors and omission in BOP statistics. Recorded discrepancies would somewhat challenge the interpretation of the accounts if this item was large or volatile.
In respect of the overall accounting framework of BOP statistics, errors and omissions measure the extent of discrepancies occurring between total recorded inflows and total recorded outflows (both financial and nonfinancial). In principle, because of the double accounting framework of BOP they should balance each other, although in practice this appears more difficult, given the fact that generally the 'legs' of the transactions are not collected by the compiler simultaneously but usually from different sources of information([32]). Comparing BOP with the ROW account, errors and omissions are an explicit component disseminated with the BOP, whereas in the ROW account some adjustments are done, usually within the financial account to close the gap and provide balance figures of net lending/net borrowing for nonfinancial (B9) and financial transactions (B9F).

Figure 5: Net errors and omissions, EU-28, sum of national data, 2010-2014 (million EUR)



Net errors and omissions=net acquisition of assets/net incurrence of liabilities in financial account minus net lending/net borrowing in current/capital account

Source: Eurostat

Statistically, net errors and omissions measure the extent the net balancing item of the financial account exceeds the net balancing item of the current/capital account. In the national BOP statistics of the EU-28 Member States this item shows a smoothening trend since 2011 approaching the zero benchmark considerably, with the discrepancy appearing minor in recent years (in 2014 +11.7 billion EUR). Before, the measure was significantly negative, when turning finally positive in 2013. A conclusive interpretation of the underlying causes for this changing situation appears difficult, given the heterogeneity of compilation systems in Member States, but it can be generally concluded that national compilers have successfully aimed at making their statistics more consistent in recent years. The higher (negative) discrepancies in 2010-2012 would recommend further revision efforts in those countries, where negative outliers extensively appeared during those years, in order to make the overall data series for the EU-28 more consistent.
Keeping in mind the above situation, the BPM6 offers some basic interpretation for the study of net errors and omissions: negative values would indicate that either credit flows in the current/capital account and net increases in financial account liabilities are too high, or alternatively debit flows in the current/capital account and net increases in financial account assets are too low ([33]).

([32]) A useful explanation among others provides the French compiler, methodological notes, part 2: https://www.banque-france.fr/fileadmin/user_upload/banque_de_france/Economie_et_Statistiques/BDP-Methodologie_072015.pdf.

([33]) For the interpretation of net errors and omissions, see: BPM6, paragraphs 2.24 ff. Also very helpful the BPM6 Compilation Guide (IMF, 2014), paragraphs 8.93 to 8.96 on analysis over time.

Table 9: Net errors and omission, by country, 2014

	NEO (million EUR)	ARE (%, CA)	RMSE (million EUR)	RMSE (%, CA)
Belgium	-427	0.1	1 167	0.3
Bulgaria	-1 435	4.7	804	2.8
Czech Republic	-779	0.6	986	0.8
Denmark	3 101	2.0	6 815	4.6
Germany	28 377	1.9	35 559	2.5
Estonia	-113	0.6	153	0.9
Ireland	-11	0.0	5 656	2.3
Greece	1 894	2.7	1 022	1.5
Spain	6 419	1.6	6 351	1.7
France	6 649	0.8	17 259	2.1
Croatia	-566	2.5	233	1.1
Italy	12 048	2.2	13 985	2.6
Cyprus	383	2.4	218	1.2
Latvia	511	3.1	150	1.0
Lithuania	-1 636	5.2	591	2.1
Luxembourg	1	0.0	34	0.0
Hungary	355	0.3	1092	1.1
Malta	-220	0.7	383	1.3
Netherlands	-15 014	2.0	4 511	0.6
Austria	-2 533	1.2	3 331	1.7
Poland	-5 433	2.5	3 085	1.6
Portugal	181	0.2	259	0.3
Romania	-421	0.6	668	1.1
Slovenia	-92	0.3	458	1.6
Slovakia	-2 492	3.4	1 241	1.8
Finland	-5 656	5.9	4 500	4.8
Sweden	-10 275	4.5	10 493	4.7
United Kingdom	-1 110	0.1	48 703	5.7

Net errors and omissions(NEO)=net acquisition of assets/net incurrence of liabilities in financial account minus net lending/net borrowing in current/capital account; average relative error (ARE, CA)=absolute NEO divided by average current account gross transactions; Root Mean Square error (RMSE).

Source: Eurostat

After all, the exposure to internal accounting discrepancies in European BOP statistics appears lower in recent years. This promising trend could have arisen from new data sources and extended data collections becoming available based on micro data sources, which provided a more complete and consistent picture to the compiler, particularly on financial assets and liabilities ([34]), and Member States becoming more actively aware of data gaps in their jurisdictions in the aftermath of the financial crisis, possibly addressing the bias in the nonfinancial accounts ([35]).

However, the situation was very different in the Member States (Table 9) — in 2014 17 Member States showed negative errors and omissions, while 11 Member States recorded positive values ([36]). The highest values occurred in Germany (EUR +28.4 billion), followed by Italy (EUR +12.0 billion), while the Netherlands and Sweden showed negative outliers (EUR -15.0 and -10.3 billion, respectively). Compared to their total average current account gross transactions Finland, Lithuania, Sweden and Bulgaria showed

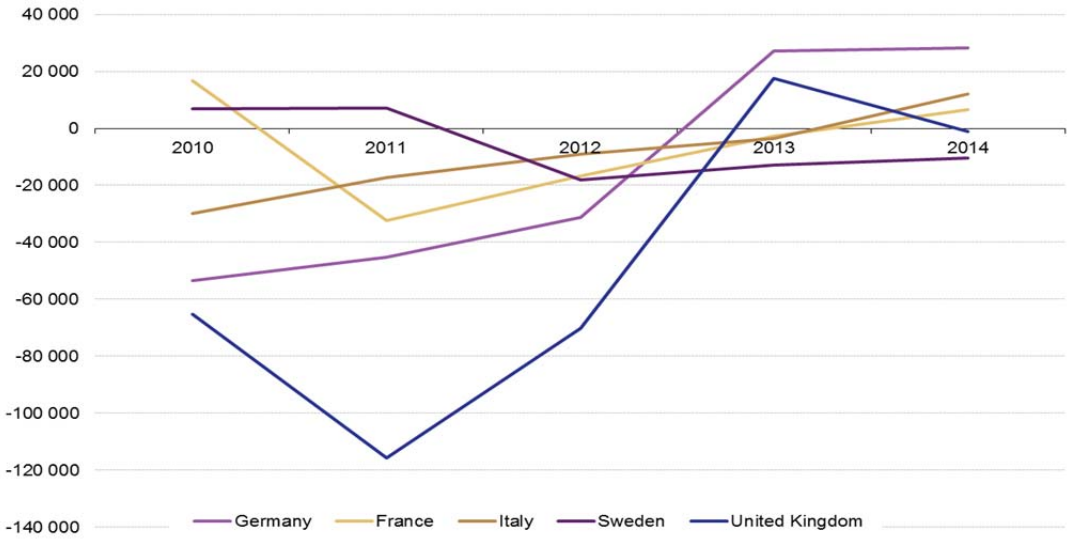
([34]) Introduction of securities-by-securities reporting based on balance-sheet data and custodian reports on securities holdings (incl. households), and extension of statistical coverage (special purpose entities, financial holdings, insurances).

([35]) In the current and capital accounts credit flows exceeded debit flows significantly for many years, which might have been based on general information asymmetries concerning imports into the compiling economy, and their resulting underrepresentation of debit flows in this context.

([36]) Among those, Luxembourg showed full internal consistency since 2012 with measures close to zero.

highest relative exposure ([37]). These relative measures may serve compilers as useful information to quantify the extent of unexplained residuals in their statistics in regard to predefined benchmarks. However from an overall perspective we would like to draw the attention rather to large and volatile values for net errors and omissions developing during the time span, that inevitably hamper a conclusive quality analysis. Consequently, it appears instrumental to identify country data with a more volatile genesis of their net errors and omissions over the past years.

Figure 6: Net errors and omissions, by countries with highest RMSE, 2010-2014 (million EUR)



Root Mean Square error (RMSE) greater than 10 000 million EUR

Source: Eurostat

In order to determine the degree of volatility we propose a common standard deviation measure, the root mean square error (RMSE), which allows us to identify volatile data series in the 5-years period. Higher degrees of volatility (i.e. showing an RMSE higher than EUR 10 billion) were measured in Germany, the United Kingdom, France, Italy and Sweden during the period 2010-2014, while the United Kingdom, Finland and Sweden showing also relative outliers in exposure compared to their average current account gross transactions (United Kingdom 5.7%). A closer look on these country data reveals two patterns — 3 of these countries follow the overall trend towards slightly positive net errors and omissions in recent years (Germany, France, Italy), while Sweden and the United Kingdom are supporting negative values in their recent statistical discrepancies. Most evidently on the other hand the case of the United Kingdom also illustrates highly volatile development with large negative outliers before 2013.

From the above, it may be concluded that there is a promising trend to more internal consistency in European BOP statistics, while some countries still show outliers, which should be analysed by compilers ([38]). Particularly the United Kingdom may want to review its historical time series before 2013 in the above context, while Germany, Italy, the Netherland and Sweden are encouraged to investigate about the nature of their significant positive/negative exposure to absolute discrepancies in 2014.

([37]) The indicator of average relative errors (ARE) is usually related to the average current account gross transactions (total annual current account credits+debits, divided by 2). At the BOPWG in November 2015 the average financial account stocks (total annual IIP assets+IIP liabilities, divided by 2) were alternatively proposed as a base for a relative quality measure. The latter is considerably smaller and would show Lithuania, Slovakia and Bulgaria with the highest relative error exposures. Details in Annex, Table A12.

([38]) BPM6, paragraph 2.25 suggests that the values of net errors and omissions should be analysed by compilers.

3. Conclusions

Consistency between BOP and NA has recently shown an encouraging development for some of the nonfinancial account components goods, secondary income and the capital account in quarterly statistics. However discrepancies in services and the primary income appear elevated and persistent over the time. It has been further shown that the analysis of inconsistencies in the financial accounts is more problematic due to lack of breakdown data, and should be commended to the compiler for a more details analysis of the component accounts. However, it has been also emphasised that inconsistencies in financial account stocks can easily transmit into the above mentioned nonfinancial account components ('contagion effect') via estimation practices being based on inconsistent financial data (FISIM, property income).

The explanations received from compilers in the BOP/ROW survey have further illustrated that the complex nature of certain statistical items in BOP and national accounts require the application of shared or common estimation methods by national counterparts. National coordination issues and the different use of databases appear as the most prominent explanation for measured discrepancies. A way forward (if not already achieved) is to enhance the technical cooperation between national counterpart organisations, dealing with both statistics. In some Member States such initiatives have shown productive results and helped to detect and correct errors in the respective data. Further, an integrated approach in data compilation could be envisaged between national counterparts (as recently implemented in the Netherlands ([39])). However, the latter clearly requires a national consent and could be hampered by institutional rigidities in some Member States. In order to honour reconciliation efforts support by the European institutions may be appropriate. A continued close cooperation between Eurostat and ECB appears instrumental to a coordinated mediation of country-specific inconsistency issues, for example through the ongoing practice of country visits by both partners.

Currently production cycles in BOP (QBOP) and national accounts (QSA) are not entirely synchronised, which gives rise to discrepancies due to vintage and revision effects. While QBOP is generally produced at t+85 days ([40]), quarterly nonfinancial sector accounts data become available by t+85 days for Member States whose currency is the euro, but t+3 months for Member States whose currency is not the euro ([41]). This situation leads to inhomogeneous production cycles of country data within QSA and gives a bias to data comparisons. Consequent synchronisation of the production and revision calendars for the two statistics would not only facilitate quality monitoring, but also pave the way towards a more harmonised compilation processes in the EU-28. This clearly refers to a need for a harmonised implementation of EU revision policy.

The presented data confrontation of financial transactions in particular revealed some conceptual inconsistencies in both statistics, which require further follow-up by the international institutions. In this context there is a clear need for a consistent mapping of the BPM6 functional categories with the ESA2010 financial instrument categories, with a particular impact on the reporting of the direct investment components in BOP as regards debt instrument components (FL), insurance, pensions and standardised guarantee schemes (F.7) and other accounts receivable/payable (F.9). Further clarification appears necessarily for the net recording of financial derivatives and the applied sign convention in the ROW account. The impact of BPM6 convention on deposit-taking corporations as concerns the interpretation of their deposits and loans with nonbanks has to be fully adopted in ESA2010, possibly also with a reference to the ECB convention on excluding money market funds from the above convention.

An analysis of net errors and omissions finally has observed promising trends of more internally consistent data in BOP statistics during the recent years, but has also shown that some countries require further investigation.

([39]) Venniker R.: 'Integrating Balance of Payments and Sector Accounts in the Netherlands', BOPWG, 26 November 2015.

([40]) This deadline will be shortened in 2017.

([41]) For quarterly b.o.p. see Commission Regulation (EU) No. 555/2012 of 22 June 2012; for quarterly national accounts see Regulation (EU) No. 549/2013 of the European Parliament and of the Council of 21 May 2013.

Outlook

This analysis will be further developed by Eurostat, in order to study the relationship and impact of revision policies on discrepancies, while new results will be discussed with relevant stakeholders. Further, the issue of intra-EU asymmetries in BOP has to be investigated, which could further contribute to better understanding of compilation practices of geographical counterpart information in Member States, and raise possible aspects of cooperation in future between compilers not only at national levels, but also between Member States.

Annex

Table A1: Total discrepancies, Goods account, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
Sum of MS	28 201	27 788	37 074	39 929	35 214
Belgium	1 916	4 019	4 708	5 292	1 761
Bulgaria	2 083	1 685	101	54	767
Czech Republic	173	116	1	1	689
Denmark	1 715	1 966	1 930	1 957	2 022
Germany	4	15	9 660	12 819	4 916
Estonia	2	1	1	1	2
Ireland	1	0	958	1 163	1 204
Greece	4 619	5 575	5 416	4 605	5 369
Spain	3	1	2	1	0
France	7 641	5 774	5 349	5 631	9 534
Croatia	86	3	2	0	38
Italy	3	0	1	17	10
Cyprus	0	0	0	0	0
Latvia	71	55	250	39	0
Lithuania	0	1	2	1	1
Luxembourg	1 228	1 068	221	547	619
Hungary	92	73	1	1	1
Malta	118	98	113	117	133
Netherlands	0	1	0	0	0
Austria	1 960	4	583	595	611
Poland	2	1	2	1	3
Portugal	3 933	3 738	4 063	4 396	4 608
Romania	641	413	1 804	156	934
Slovenia	81	285	133	323	24
Slovakia	495	370	372	391	387
Finland	9	14	336	105	57
Sweden	1 326	2 510	1 066	1 714	1 526
United Kingdom	0	1	1	1	0

Discrepancies = absolute differences BOP minus ROW items

NA = not available

Source: Eurostat

Table A2: Total discrepancies, Services account, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
Sum of MS	70 814	73 030	78 544	80 394	101 461
Belgium	554	421	1 641	1 195	515
Bulgaria	1 958	1 835	200	43	850
Czech Republic	28	30	66	45	63
Denmark	1 716	1 967	1 929	1 956	2 022
Germany	440	1 181	3 656	3 847	6 278
Estonia	1	0	1	1	1
Ireland	0	0	958	1 162	1 202
Greece	2 730	3 458	3 832	4 105	4 437
Spain	612	744	728	393	19
France	33 016	32 022	37 280	43 841	60 178
Croatia	66	56	66	56	190
Italy	714	979	762	886	1 114
Cyprus	0	0	0	0	0
Latvia	180	112	54	41	0
Lithuania	1	0	1	1	1
Luxembourg	14 809	15 735	11 836	10 878	11 763
Hungary	81	73	57	5	537
Malta	98	47	91	336	338
Netherlands	4	5	0	2	0
Austria	572	749	676	783	458
Poland	320	797	314	241	39
Portugal	3 914	5 021	4 776	5 435	6 070
Romania	1 008	739	1 402	1	112
Slovenia	66	75	76	42	38
Slovakia	253	358	419	427	220
Finland	262	423	329	409	696
Sweden	7 410	6 202	7 396	4 262	4 318
United Kingdom	1	0	1	1	2

Discrepancies = absolute differences BOP minus ROW items

NA = not available

Source: Eurostat

Table A3: Total discrepancies, Primary income account, 2010-2014 (million EUR)

	2010	2011	2012	2013	2014
Sum of MS	43 031	47 321	37 102	52 868	106 298
Belgium	6 563	11 894	961	1 270	9 956
Bulgaria	468	713	929	736	604
Czech Republic	1 935	3 296	634	305	3 022
Denmark	1	2	5	1	2
Germany	1 192	1 350	1 269	3 247	4 572
Estonia	3	17	4	31	4
Ireland	25	20	36	95	27
Greece	950	834	411	777	1 243
Spain	1 374	200	376	79	60
France	9 007	3 076	17 706	14 821	6 952
Croatia	100	117	117	121	305
Italy	768	1 005	733	228	84
Cyprus	6	3	2	10	8
Latvia	58	29	27	46	35
Lithuania	5	10	68	52	89
Luxembourg	NA	NA	NA	NA	NA
Hungary	19	100	86	27	8
Malta	248	203	41	133	357
Netherlands	6 362	13 646	4 421	21 387	66 114
Austria	2	2	261	147	723
Poland	1 044	1 366	2 239	1 181	1 138
Portugal	5 140	4 978	1 415	885	983
Romania	1 067	903	1 120	911	2 016
Slovenia	135	237	346	389	446
Slovakia	952	131	300	622	792
Finland	779	715	990	498	3 041
Sweden	4 825	2 472	2 606	4 869	3 717
United Kingdom	2	3	0	1	2

Discrepancies = absolute differences BOP minus ROW items

NA = not available

Source: Eurostat

Table A4: Total discrepancies, Secondary income account, 2010-2014 (million EUR)

	2010	2011	2012	2013	2014
Sum of MS	34 524	41 635	57 085	49 333	40 025
Belgium	740	861	1 902	2 031	1 853
Bulgaria	365	471	656	770	169
Czech Republic	784	754	280	1 062	1 270
Denmark	390	3	2	1	2
Germany	2 903	7 108	10 501	4 228	3 697
Estonia	33	28	10	25	10
Ireland	24	17	6 914	2 706	4 566
Greece	264	186	573	438	385
Spain	3 400	463	1 557	1 578	806
France	14 913	18 769	19 316	22 908	16 221
Croatia	0	133	137	138	314
Italy	4	1	3	4	4
Cyprus	1	0	1	1	4
Latvia	13	6	13	5	0
Lithuania	3	16	16	31	33
Luxembourg	NA	NA	NA	NA	NA
Hungary	43	108	14	24	181
Malta	NA	NA	NA	NA	NA
Netherlands	4 045	4 783	5 102	4 108	2 052
Austria	1	0	174	71	601
Poland	2 942	2 542	3 881	4 021	4 129
Portugal	832	750	1 641	1 544	849
Romania	350	369	396	244	289
Slovenia	391	549	437	376	338
Slovakia	260	550	668	889	408
Finland	316	348	298	323	328
Sweden	1 508	2 820	2 590	1 808	1 512
United Kingdom	0	1	2	1	4

Discrepancies = absolute differences BOP minus ROW items

NA = not available

Source: Eurostat

Table A5: Total discrepancies, Capital account, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
Sum of MS	10 742	15 755	12 278	11 687	14 439
Belgium	554	40	362	158	150
Bulgaria	39	41	27	65	120
Czech Republic	1 612	2 347	440	270	1 511
Denmark	1	1	1	1	1
Germany	636	6 206	1 409	826	1 263
Estonia	2	19	2	5	10
Ireland	1	150	1	1	0
Greece	1 849	1 375	1 156	1 765	532
Spain	957	348	226	995	1 643
France	1 098	1 348	3 968	1 886	2 078
Croatia	27	13	41	31	59
Italy	2	2	2	4	0
Cyprus	32	19	19	174	29
Latvia	1	3	9	0	0
Lithuania	6	1	2	1	2
Luxembourg	196	176	389	761	978
Hungary	22	4	3	43	32
Malta	6	5	5	3	3
Netherlands	1 869	2 266	2 913	2 923	1 181
Austria	454	104	34	15	9
Poland	891	137	443	1 170	3 277
Portugal	126	65	85	93	97
Romania	0	1	1	2	13
Slovenia	237	232	154	158	352
Slovakia	56	285	323	273	1
Finland	14	18	7	1	10
Sweden	13	245	42	33	29
United Kingdom	41	304	216	29	1 058

Discrepancies = absolute differences BOP minus ROW items

NA = not available

Source: Eurostat

Table A6.1: Mean absolute discrepancies, Current/Capital account, 2010-2014 (million EUR)

	Goods	Services	Primary income	Secondary income	Capital account	Total
Belgium	3 539	865	6 129	1 477	253	12 263
Bulgaria	938	977	690	486	58	3 150
Czech Republic	196	46	1 838	830	1 236	4 146
Denmark	1 918	1 918	2	80	1	3 919
Germany	5 483	3 080	2 326	5 687	2 068	18 645
Estonia	1	1	12	21	8	42
Ireland	665	664	40	2 845	31	4 246
Greece	5 117	3 712	843	369	1 335	11 377
Spain	1	499	418	1 561	834	3 313
France	6 786	41 267	12 853	18 425	2 076	81 407
Croatia	26	87	152	144	34	443
Italy	6	891	564	3	2	1 466
Cyprus	0	0	6	1	55	62
Latvia	83	77	39	7	3	209
Lithuania	1	1	45	20	2	69
Luxembourg	737	13 004	NA	NA	NA	13 741
Hungary	34	150	48	74	21	327
Malta	116	182	196	NA	4	498
Netherlands	0	2	22 386	4 018	2 230	28 637
Austria	751	648	227	169	123	1 918
Poland	2	344	1 393	3 346	1 183	6 269
Portugal	4 148	5 043	2 680	1 123	93	13 087
Romania	790	653	1 203	329	3	2 978
Slovenia	169	59	311	418	227	1 184
Slovakia	403	335	559	555	187	2 040
Finland	104	424	1 204	323	10	2 065
Sweden	1 628	5 917	3 698	2 048	72	13 363
United Kingdom	1	1	2	2	330	334

Discrepancies = absolute differences BOP minus ROW items.

NA = not available.

Source: Eurostat

Table A6.2: Mean relative discrepancies, Current/Capital account, 2010-2014 (% of GDP)

	Goods	Services	Primary income	Secondary income	Capital account
Belgium	0.9	0.2	1.6	0.4	0.1
Bulgaria	2.3	2.4	1.7	1.2	0.1
Czech Republic	0.1	0.0	1.2	0.5	0.8
Denmark	0.8	0.8	0.0	0.0	0.0
Germany	0.2	0.1	0.1	0.2	0.1
Estonia	0.0	0.0	0.1	0.1	0.0
Ireland	0.4	0.4	0.0	1.6	0.0
Greece	2.6	1.9	0.4	0.2	0.7
Spain	0.0	0.0	0.0	0.1	0.1
France	0.3	2.0	0.6	0.9	0.1
Croatia	0.1	0.2	0.3	0.3	0.1
Italy	0.0	0.1	0.0	0.0	0.0
Cyprus	0.0	0.0	0.0	0.0	0.3
Latvia	0.4	0.4	0.2	0.0	0.0
Lithuania	0.0	0.0	0.1	0.1	0.0
Luxembourg	1.7	29.5	NA	NA	NA
Hungary	0.0	0.1	0.0	0.1	0.0
Malta	1.6	2.5	2.7	NA	0.1
Netherlands	0.0	0.0	3.5	0.6	0.3
Austria	0.2	0.2	0.1	0.1	0.0
Poland	0.0	0.1	0.4	0.9	0.3
Portugal	2.4	2.9	1.5	0.6	0.1
Romania	0.6	0.5	0.9	0.2	0.0
Slovenia	0.5	0.2	0.9	1.1	0.6
Slovakia	0.6	0.5	0.8	0.8	0.3
Finland	0.1	0.2	0.6	0.2	0.0
Sweden	0.4	1.4	0.9	0.5	0.0
United Kingdom	0.0	0.0	0.0	0.0	0.0

Relative discrepancies = absolute discrepancies in percentage of GDP.

NA = not available.

Source: Eurostat

Table A7: Total discrepancies, Financial derivatives, transactions, 2010-2014 (million EUR)

	2010	2011	2012	2013	2014
Sum of MS	49 626	41 555	46 253	24 209	69 390
Belgium	990	2 177	1 448	1 452	2 120
Bulgaria	5	27	16	9	33
Czech Republic	356	64	214	153	94
Denmark	180	180	4 102	686	437
Germany	26 660	24 539	15 125	4 168	43 884
Estonia	61	62	39	0	4
Ireland	824	608	7 184	3 362	10 582
Greece	1 130	1 819	455	377	711
Spain	701	1 078	439	275	518
France	7 898	1 200	0	1	2
Croatia	487	227	120	209	123
Italy	20	1 965	5 086	3 199	5 134
Cyprus	637	51	472	3	173
Latvia	33	22	22	46	48
Lithuania	99	59	45	51	19
Luxembourg	2 740	1 083	5 871	2 129	235
Hungary	5	9	6	2	2
Malta	41	45	30	15	1
Netherlands	3 793	2 191	2 594	5 251	2 953
Austria	0	1	1	42	64
Poland	984	12	325	28	166
Portugal	7	1	0	6	3
Romania	24	19	6	1	2
Slovenia	10	30	5	2	6
Slovakia	337	190	155	25	333
Finland	306	311	952	1 149	434
Sweden	1 173	3 538	1 443	1 354	159
United Kingdom	125	47	97	216	1 152

Discrepancies = differences BOP net lending/borrowing (FD) minus net acquisitions of assets/net incurrence of liabilities (ROW, F7; net=liabilities minus assets).

Excluding financial derivatives in reserve assets.

Source: Eurostat

Table A8: Total discrepancies, Financial account, transactions, 2010-2014 (million EUR)

	2010	2011	2012	2013	2014
Sum of MS	298 490	219 507	277 924	176 489	461 797
Belgium	7 474	6 916	6 445	3 694	4 665
Bulgaria	4 133	144	960	3 827	123
Czech Republic	100	1 512	5 202	13 301	2 291
Denmark	14 713	978	12 713	3 552	6 998
Germany	41 091	6 769	64 942	39 298	197 892
Estonia	212	444	58	55	114
Ireland	42	12	8	1 863	140 419
Greece	6 370	15 461	5 185	8 024	15 626
Spain	6 805	1 202	982	12 204	4 720
France	35 857	7 693	24 258	38 196	35 754
Croatia	1 658	232	635	186	613
Italy	40 480	16 792	12 501	18 753	8 555
Cyprus	34	452	2 960	5 604	1 447
Latvia	121	38	959	583	3 557
Lithuania	101	19	1	200	610
Luxembourg	3 596	5 140	5 049	3 575	250
Hungary	56	45	74	602	1 524
Malta	906	758	198	446	654
Netherlands	1 934	6 779	9 699	3 359	14 941
Austria	71	73	17	8	2
Poland	21 582	6 378	15 868	602	7 102
Portugal	408	238	17	280	181
Romania	1 260	1 861	1 310	278	139
Slovenia	169	357	119	372	164
Slovakia	258	662	7 586	663	246
Finland	1 886	2 847	10 854	5 791	586
Sweden	24 240	5 175	11 684	8 844	255
United Kingdom	82 933	130 531	77 639	2 328	12 370

Discrepancies = differences BOP net lending/borrowing (financial account; net=assets minus liabilities) minus net acquisitions of assets/net incurrence of liabilities (ROW account; net=liabilities minus assets).

Source: Eurostat

Table A9: Total discrepancies, Financial account, positions, 2010-2014 (million EUR)

	2010	2011	2012	2013	2014
Sum of MS	1 242 724	1 054 859	518 304	808 650	671 465
Belgium	55 157	16 048	53 338	13 761	57 820
Bulgaria	4 309	5 839	2 050	719	1 049
Czech Republic	469 010	466 635	21 279	27 898	25 862
Denmark	26 612	54 258	4 398	3 559	3 701
Germany	226 742	95 928	50 843	185 170	125 995
Estonia	163	26	113	90	38
Ireland	15 199	15 673	75 182	26 448	76 434
Greece	1 979	23 945	11 351	22 647	3 276
Spain	36 388	22 444	23 736	12 371	25 622
France	20 737	37 512	70 912	153 896	74 984
Croatia	1 006	1 160	989	1 200	1 512
Italy	27 281	7 252	14 273	9 527	50 451
Cyprus	318	377	202	8	807
Latvia	3 290	3 423	3 132	3 055	252
Lithuania	0	0	0	0	20
Luxembourg	17 772	13 125	3 196	22 756	28 847
Hungary	201	164	195	87	85
Malta	400	287	104	81	1
Netherlands	47 071	20 836	18 490	60 749	105 280
Austria	8	6	240	2	0
Poland	3 194	4 307	13 648	4 084	8 415
Portugal	12 949	14 964	15 509	10 714	12 147
Romania	145 628	149 074	2 610	1 682	3 055
Slovenia	689	1 090	715	1 167	1 975
Slovakia	35 947	39 310	3 463	4 317	5 571
Finland	14 612	9 758	5 560	4 042	4 059
Sweden	48 536	3 168	12 019	33 274	27 500
United Kingdom	27 524	48 252	110 759	205 347	26 707

Discrepancies = differences IIP net financial account; net=assets minus liabilities) minus net acquisitions of assets/net incurrence of liabilities (ROW account; net=liabilities minus assets).

Source: Eurostat

Table A10: Mean absolute and relative discrepancies, Financial account, transactions, 2010-2014
(million EUR, % of GDP)

	Absolute discrepancies	Relative discrepancies
Belgium	5 839	1.5
Bulgaria	1 837	4.5
Czech Republic	4 481	2.8
Denmark	7 791	3.1
Germany	69 998	2.5
Estonia	177	1.0
Ireland	28 469	16.1
Greece	10 133	5.2
Spain	5 183	0.5
France	28 352	1.4
Croatia	665	1.5
Italy	19 416	1.2
Cyprus	2 100	11.2
Latvia	1 052	4.9
Lithuania	186	0.6
Luxembourg	3 522	8.0
Hungary	460	0.5
Malta	592	8.1
Netherlands	7 342	1.1
Austria	34	0.0
Poland	10 306	2.7
Portugal	225	0.1
Romania	969	0.7
Slovenia	236	0.6
Slovakia	1 883	2.6
Finland	4 393	2.2
Sweden	10 040	2.4
United Kingdom	61 160	3.0

Absolute discrepancies in million EUR, relative discrepancies in percentage of GDP

Source: Eurostat

Table A11: Net errors and omission, by country, 2010-2014
(million EUR)

	2010	2011	2012	2013	2014
EU-28	-173 316	-242 740	-171 574	22 969	11 705
Belgium	- 333	-2 404	- 374	1 274	- 427
Bulgaria	732	472	520	- 379	-1 435
Czech Republic	- 718	- 100	922	-2 103	- 779
Denmark	-14 712	- 978	1 735	3 575	3 101
Germany	-53 561	-45 345	-31 312	27 034	28 377
Estonia	53	108	335	- 40	- 113
Ireland	-9 328	-12 138	- 237	1 941	- 11
Greece	1 761	32	1 322	3 208	1 894
Spain	-5 439	257	-1 024	12 789	6 419
France	16 687	-32 298	-16 619	-2 699	6 649
Croatia	- 772	-1 095	- 421	- 855	- 566
Italy	-29 948	-17 175	-9 090	-3 467	12 048
Cyprus	227	552	500	- 52	383
Latvia	328	63	220	193	511
Lithuania	- 270	- 5	- 115	- 403	-1 636
Luxembourg	- 20	79	0	2	1
Hungary	-1 044	-2 510	507	- 650	355
Malta	122	22	483	- 670	- 220
Netherlands	-3 632	-8 947	-13 919	-5 357	-15 014
Austria	-4 734	- 10	893	5 117	-2 533
Poland	-10 246	-7 282	-2 835	-11 241	-5 433
Portugal	410	- 239	17	- 279	181
Romania	665	1 148	1 380	71	- 421
Slovenia	-1 469	- 739	-1 113	- 743	- 92
Slovakia	- 261	- 723	-1 779	-3 723	-2 492
Finland	689	-4 983	-13 291	-4 099	-5 656
Sweden	6 831	7 183	-18 095	-12 997	-10 275
United Kingdom	-65 334	-115 685	-70 183	17 522	-1 110

Net errors and omissions (NEO)=net acquisition of assets/net incurrence of liabilities in financial account minus net lending/net borrowing in current/capital account.

EU-28 = sum of national net errors and omissions.

Source: Eurostat

Table A12: Net errors and omission, by country, 2014

	NEO (million EUR)	ARE (%, IIP)	RMSE (million EUR)	RMSE (%, IIP)
Belgium	- 427	0.02	1 167	0.06
Bulgaria	-1 435	2.84	804	1.75
Czech Republic	- 779	0.44	986	0.61
Denmark	3 101	0.44	6 815	1.05
Germany	28 377	0.40	35 559	0.54
Estonia	- 113	0.36	153	0.56
Ireland	- 11	0.00	5 656	0.17
Greece	1 894	0.56	1 022	0.30
Spain	6 419	0.32	6 351	0.33
France	6 649	0.10	17 259	0.28
Croatia	- 566	1.20	233	0.50
Italy	12 048	0.50	13 985	0.62
Cyprus	383	0.18	218	0.09
Latvia	511	1.41	150	0.47
Lithuania	-1 636	5.77	591	2.22
Luxembourg	1	0.00	34	0.00
Hungary	355	0.13	1 092	0.39
Malta	- 220	0.10	383	0.19
Netherlands	-15 014	0.21	4 511	0.07
Austria	-2 533	0.29	3 331	0.39
Poland	-5 433	1.66	3 085	1.03
Portugal	181	0.04	259	0.06
Romania	- 421	0.43	668	0.70
Slovenia	- 92	0.19	458	1.06
Slovakia	-2 492	3.13	1 241	1.76
Finland	-5 656	0.78	4 500	0.66
Sweden	-10 275	0.80	10 493	0.89
United Kingdom	-1 110	0.01	48 703	0.38

Net errors and omissions(NEO)=net acquisition of assets/net incurrence of liabilities in financial account minus net lending/net borrowing in current/capital account; average relative error (ARE, IIP)=absolute NEO divided by average financial account gross positions; Root Mean Square error (RMSE).

Source: Eurostat

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