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Revisiting the monetary presentation of the euro area balance of payments

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Revisiting the monetary presentation of the euro area balance of payments

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Abstract

We explain how the external counterpart of the euro area M3 can be analysed by using the euro area balance of payments (b.o.p.). This is possible because the net external assets of the monetary financial institutions (MFIs) are present in two statistical frameworks that follow similar conventions: the balance sheet items (BSI) of MFIs and the balance of payments statistics. The first step to including external flows in the monetary analysis is to understand the nature of the flows between resident money holders and the rest of the world. This is possible thanks to the monetary presentation of the b.o.p, which provides information on the nature of external transactions and therefore guidance on the persistence of the monetary signal stemming from external flows.

Over the past five years, the increase in the euro area's external competitiveness has given rise to a sustained current account surplus that has consistently supported monetary inflows into the euro area. At the same time, portfolio transactions, which closely reflect financial and monetary policy conditions, have fluctuated significantly, increasing monetary inflows in the period from mid-2012 to mid-2014 and turning them into net outflows during the asset purchase programme (APP) period.

Keywords: balance sheet items, balance of payments, monetary financial institutions, net external assets, cross-border flows, monetary aggregates

JEL codes: E51, E52, F45, F41, F43, F32, F34

Executive summary

The primary objective of the European Central Bank (ECB) is to maintain price stability in the euro area over the medium term. To achieve this objective, the ECB uses thorough economic and monetary analyses to monitor risks to price stability. The monetary analysis essentially entails assessing developments in the broad monetary aggregate – M3 – and its subcomponents, as well as studying M3 counterparts in the consolidated balance sheet of the banking sector.¹ The analysis of the M3 counterparts provides a very important insight into monetary developments, as it helps to identify the sources of money creation.

In broad terms, the aggregate amount of money in the economy, meaning that held by resident money holders², can change via three main channels: (i) the provision of credit by the monetary financial institutions (MFIs); (ii) the distribution of MFI liabilities between instruments inside or outside M3; and (iii) the interaction of money holders with the external sector. An example of point (iii) occurs when a household imports foreign goods or when it acquires a financial asset previously held by a foreign investor. In both cases, the amount of money held by resident money holders decreases, as the household will typically pay for these acquisitions by transferring part of its deposits to a non-resident entity.³

In this context, the monetary presentation of the balance of payments (b.o.p.) offers a link at the aggregate level between cross-border payments (or, more specifically, between the change in banks' net external position created by those payments) and the transactions that gave rise to them. As such, it represents an invaluable tool for analysing the source of the changes in the aggregate amount of broad money resulting from the interaction of the non-MFI sector with the external sector.

Technically, reflecting the unique role of MFIs as intermediators of cross-border payments, the monetary presentation of the b.o.p. results from dividing the b.o.p. transactions into two large resident sectors: (i) MFIs (or the money-issuing sector, which not only includes commercial banks but also the central bank); and (ii) non-MFIs (including the money-holding and money-neutral sectors), one being the mirror image of the other.⁴ The b.o.p. of the MFI sector is conceptually the intersection between BSI and b.o.p. statistics, and therefore it establishes the link between external monetary flows and the b.o.p. of the non-MFI sector. For this reason, the use of the monetary presentation of the b.o.p. for policy analyses relies on having the appropriate sectoral b.o.p. decomposition on a monthly basis, i.e. the frequency at which monetary data are available and analysed.

¹ See [M3](#) for further details on the definition.

² The “money-holding” sector comprises all non-MFI euro area residents, excluding central governments. This sector principally includes households, non-financial corporations, insurance corporations and pension funds and other non-MFIs located in the euro area, as well as state and local government authorities and social security funds in the euro area. Central governments are considered to be a “money-neutral” sector, with one exception: central government deposit liabilities with a monetary character (post office accounts, national savings accounts and treasury accounts) are included in the definition of the monetary aggregates of the Eurosystem.

³ This will not be the case when these transactions are “settled” with bank accounts in foreign banks.

⁴ See Annex 1 for the standard monetary presentation of the b.o.p.

1 Introduction: why revisit the 2008 Occasional Paper?

Important methodological enhancements have been made in recent years, in particular those relating to the updates of the relevant international standards, in other words, the Balance of Payments and International Investment Position Manual in 2009 (BPM6), the System of National Accounts in 2008 (SNA) and the European System of Accounts in 2010 (ESA 2010). One of the key characteristics of these updates was the convergence towards more consistent definitions and classifications. Furthermore, new breakdowns have become available on a monthly basis for the euro area b.o.p., for example transactions for the government sector, which have recently provided relevant information for the analysis and more accurate information on equity and debt securities issued by euro area residents (including MFIs) due to the full implementation of security-by-security collection in the context of external statistics combined with a stable and developed Centralised Securities Database (CSDB)⁵.

The aim of this paper is threefold.

First, the paper presents the updated statistical framework of the monetary presentation of the b.o.p. in the light of the developments in methodology and data availability since the first occasional paper on this subject was published in September 2008, in particular owing to the review of the international statistical standards (BPM6 and ESA 2010).⁶ Box 1 summarises the methodological enhancements in MFI balance sheet statistics and balance of payments statistics since 2008, while Annex 2 describes in detail the new reporting requirements in MFI balance sheet statistics and the changes in data availability by sector for the euro area balance of payments aggregates. The framework relies on the availability of certain breakdowns in monetary statistics and in the b.o.p., as well as on consistency between the two datasets. Therefore, the paper can also be used to develop a monetary presentation of the b.o.p. for a country other than the euro area as a whole in order to facilitate a combined analysis.

Second, the paper presents enhanced results for the euro area. Particular emphasis is given to the external holdings of securities issued by MFIs, which are identifiable in monetary statistics only to a very limited extent. With regard to equities and long-term debt security liabilities, the b.o.p. data clearly complement the monetary statistics in terms of holdings by non-residents.

⁵ Database that contains complete, accurate, consistent and up-to-date information on all individual securities relevant for the statistical purposes of the European System of Central Banks (ESCB). This means securities issued by EU residents; securities likely to be held and transacted in by EU residents; and securities denominated in euro, regardless of who the issuer is and where they are held. The CSDB contains information on over 5 million debt securities, equities and mutual fund shares/units issued by residents of EU Member States or by others.

⁶ New ECB requirements implemented through the ECB Guideline ECB/2011/23 on external statistics and ECB Regulation ECB/2013/33 on MFI balance sheet reporting. For further information, see [BPM6](#) and [ESA 2010 implementation](#).

Third, the paper aims to combine BSI with b.o.p. statistics in order to analyse the economic developments in the euro area since the onset of the financial crisis. These developments triggered non-standard monetary policy measures, which had an impact on the external sector through different channels.

Box 1

Methodological enhancements since 2008

Since 2008, a number of developments in BSI and b.o.p. statistics have made it possible to refine the monetary presentation of the balance of payments.

With regard to MFIs, under Regulation ECB/2008/32, new data are being collected since June 2010 on a range of additional asset and liability items, as well as new counterparty and maturity breakdowns. Two of these breakdowns – the identification of repos (in deposits) and reverse repos (in loans) with domestic central counterparties (CCPs) – led to refinements in M3 and “other assets”. In particular, repos with domestic CCPs are excluded from M3 and included in “other assets”.

Regulation ECB/2013/33 reflected the implementation of ESA 2010 in monetary statistics, which involved adding new breakdowns, starting with the reference period of December 2014. One of these is the identification of positions in financial derivatives vis-à-vis non-euro area counterparties. However, due to the difficulties of deriving transactions from positions in financial derivatives, the transactions are still not considered to be of sufficient quality to be included under net external assets.

Please refer to Tables A.1 and A.2 in Annex 2 for details on all the new reporting requirements introduced by the two aforementioned regulations.

With regard to the b.o.p., in 2008, the CSDB and the implemented security-by-security collection in the field of external statistics facilitated the breakdown of euro area portfolio investment liabilities by resident sector (Guideline ECB/2007/03). In other words, the portfolio investment liabilities of the euro area MFIs, broken down by instrument (i.e. short and long-term securities, equity securities and investment fund shares), became available.

In June 2014, the BPM6 (the IMF's Balance of Payments Manual – sixth edition) methodology was introduced in the euro area. Back data consistent with BPM6 methodology were collected for reference periods starting in 2008. Data for the period 1999-2007 were estimated by the ECB. While the external statistics Guideline (ECB/2011/23 – as amended) primarily reflected the methodological and reporting changes introduced by the BPM6, it also introduced a more detailed sector breakdown of the economy, in line with MFI statistics, and more granular geographical and instrument breakdowns on a quarterly basis. This allows for a more precise analysis of developments in net external assets. Table A.3 in Annex 2 shows the changes in data availability by sector for the euro area b.o.p. aggregates.

In April 2017, a new method of estimating euro currency in circulation outside the euro area was introduced for data from 2002 onwards (more details on this method are provided in Section 3.1). Given that euro currency in circulation outside the euro area is included in the functional category “other investment” in the financial account of the b.o.p., this new estimation method constitutes an improvement in measuring net external transactions in the monetary presentation of the b.o.p. However, in monetary statistics, currency in circulation is still by default attributed to the domestic sector.

The remainder of the paper is structured as follows. Chapter 2 describes the two statistical frameworks underlying the monetary presentation of b.o.p., therefore the counterparts of M3 and the b.o.p. and the intersections between them. Chapter 3 is devoted to the practical implementation of the monetary presentation of the b.o.p. in the specific context of euro area statistics, explaining in detail the level of consistency between the two datasets and what could be defined as enhanced MFI net external assets. Chapter 4 uses the monetary presentation of the b.o.p. to analyse euro area external transactions and their monetary dynamics since 2008.

2 Framework and approach

This chapter focuses on the framework of the monetary presentation of the balance of payments (b.o.p.) that is formed based on the intersection of two different sets of statistics: BSI and b.o.p. To explain the framework, the first section of this chapter describes the components of M3 and its counterparts within the MFI balance sheet, one of which is the net external assets of the MFIs. The second section explains the balance of payments, the dynamics of the principle of double entry and its standard presentation according to the nature of the economic resources involved in the transactions. It also explains that one of the resident sectors covered by the balance of payments is that of the MFIs and therefore the sum of all the financial transactions from MFIs included in the balance of payments should be conceptually similar to the changes in the net external assets of the MFIs. The third section elaborates on the intersection between both sets of statistics and the relevance of mapping the MFI net external assets from BSI statistics and MFI financial transactions in the b.o.p. for a combined analysis of M3 and its counterparts and the monetary presentation of the b.o.p.

2.1 MFI balance sheet: M3 and its counterparts

This section deals with BSI statistics, which are legally required by the ECB.⁷ This information is used in the compilation of the consolidated euro area MFI balance sheet, which provides the basis for the derivation and analysis of euro area monetary aggregates and respective counterparts. The consolidated balance sheet is drawn up by aggregating the balance sheets of the MFIs resident in the euro area and netting the positions between them. In theory, euro area inter-MFI assets and liabilities should be equal. In practice, the reported inter-MFI assets differ from inter-MFI liabilities; therefore, the MFI consolidated balance sheet includes a residual item named “excess of inter-MFI liabilities”.

The MFI consolidated balance sheet is usually presented according to the liquidity/maturity of the financial instruments, from cash at the top to equity at the bottom. The items belonging to none of the main instrument categories appear at the end as remaining assets/liabilities. Repos are included in deposits and reverse repos in loans; only repos are shown explicitly.

Table 1 presents the main items in the MFI consolidated balance sheet; in particular, the breakdowns by instrument and original maturity.

⁷ Regulation (EU) No 1071/2013 of the [ECB concerning the balance sheet of the monetary financial institutions sector](#) (ECB/2013/33) and Guideline ECB/2014/15 on [monetary and financial statistics](#).

Table 1

MFI consolidated balance sheet

INSTRUMENT AND MATURITY CATEGORIES	
ASSETS	LIABILITIES
1 Cash 2 Loans up to 1 year over 1 and up to 5 years over 5 years 3 Debt securities held up to 1 year over 1 and up to 2 years over 2 years 4 Equity 5 Investment fund shares/units MMF shares/units Non-MMF shares/units 6 Non-financial assets (including fixed assets) 7 Remaining assets	8 Currency in circulation 9 Deposits Overnight With agreed maturity up to 1 year over 1 and up to 2 years over 2 years Redeemable at notice up to 3 months over 3 months Repos 10 MMF shares/units 11 Debt securities issued up to 1 year over 1 and up to 2 years over 2 years 12 Capital and reserves 13 Remaining liabilities

Assets and most of the liability items can be further broken down by residency and institutional sector of the counterparts. In particular, the geographical breakdown differentiates between transactions with residents inside or outside the euro area. The categorisation by counterpart institutional sector makes it possible to identify the money-holding sector.

The broad monetary aggregate M3 is composed of the short-term liabilities vis-à-vis resident sectors except other MFIs and the central government. These short-term liabilities comprise currency in circulation (banknotes and coins), overnight deposits, deposits with an agreed maturity of up to two years, deposits redeemable at notice of up to three months, repos – excluding those with resident CCPs⁸ – money market fund (MMF) shares/units and debt securities with a maturity of up to two years.

Chart 1 presents the main items of the MFI consolidated balance sheet grouped into the monetary aggregate M3 and its counterparts, as used in the monetary analysis. The chart shows that, owing to the accounting identities of the balance sheet, the M3 aggregate is obtained by adding together MFI credit to the resident non-MFI sectors⁹, MFI net external assets and other net assets¹⁰, and deducting deposits by the central government and MFI long-term liabilities¹¹. That identity holds both for positions and for net transactions. The net transactions are not part of the reporting scheme but are derived from the difference of positions, from which write-offs, revaluations and

⁸ Repos with resident CCPs are excluded from M3, because CCPs mostly intermediate transactions between euro area MFIs.

⁹ Credit to resident non-MFI sectors includes loans, debt securities, equity and non-money market fund shares.

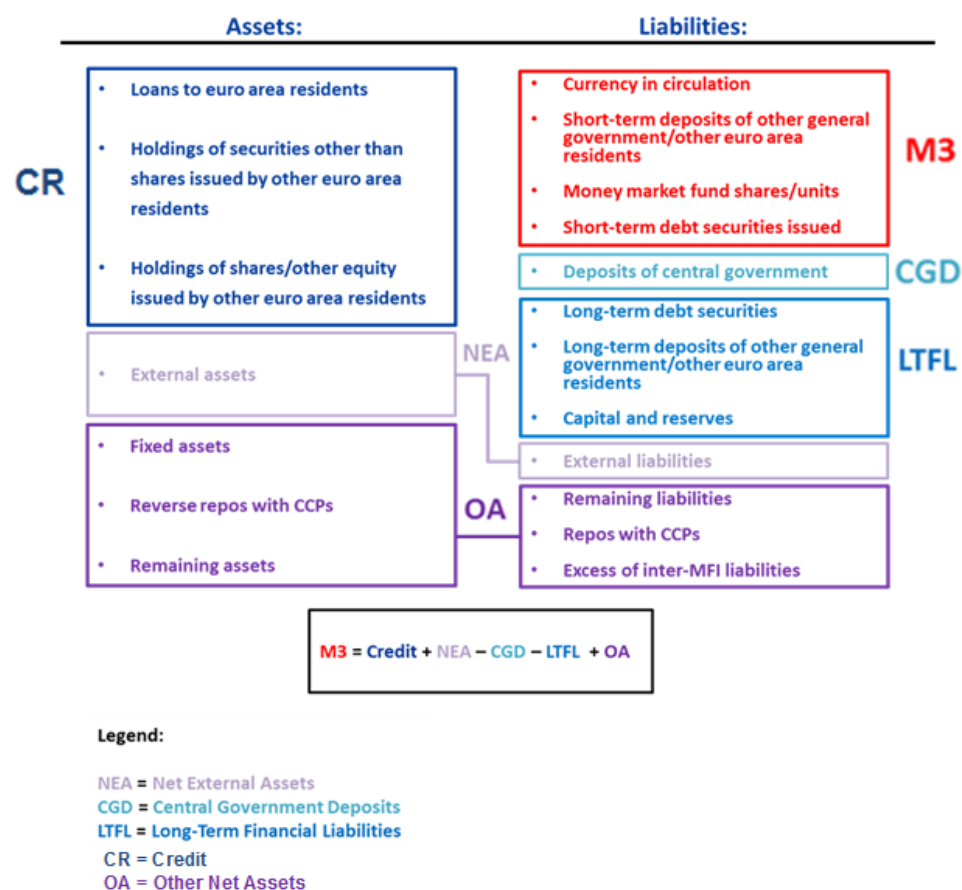
¹⁰ "Other net assets" is obtained by adding together fixed assets, reverse repos with resident CCPs and remaining assets, and subtracting repos with resident CCPs, remaining liabilities and the excess of inter-MFI liabilities.

¹¹ MFI long-term liabilities include capital and reserves, debt securities with an original maturity of over two years, deposits redeemable at notice of over three months and deposits with an agreed maturity of over two years.

reclassifications are deducted. The monetary analysis is usually conducted based on net transactions that reflect the developments in a particular period of time.

Chart 1

M3 and its counterparts in the MFI consolidated balance sheet



“Net external assets” in MFI balance sheet statistics is defined as the difference between the assets of resident MFIs vis-à-vis non-resident counterparties and the liabilities of resident MFIs vis-à-vis non-residents. It includes currency (cash on the assets side), loans (assets), deposits (liabilities), debt securities and shares, and other equity. For some instruments in the MFI consolidated balance sheet, however, no geographical breakdown of the MFI counterparties is available. That is particularly the case for certain liabilities, such as currency in circulation, debt securities with a maturity of over two years and equity. These liabilities are therefore not included in the “net external assets” and hence holdings of such instruments by non-residents are subsumed under the holdings of euro area residents. Additionally, for some instruments such as financial derivatives, while information on the geographical breakdown of positions has been available since the last quarter of 2014 within

remaining assets/liabilities¹², the data on corresponding transactions is not considered to be of adequate quality. Therefore, financial derivatives are also not included within net external assets.

Chapter 4 explains the dynamics between the M3 counterparts in greater detail and when applied to the monetary developments since 2008.

2.2 The balance of payments

The euro area b.o.p.¹³ is a statistical statement that summarises the economic transactions between euro area residents and non-residents over a specific period of time. Transactions between euro area residents are excluded.

The b.o.p. is based on a double-entry accounting system. Each transaction is recorded as consisting of two entries: a credit entry and a debit entry. Therefore, the sum of the credit entries and the sum of the debit entries are equal.

The accounts within the b.o.p. are distinguished according to the nature of the economic resources provided and received (e.g. goods, services, income or financial resources). In its standard presentation, the b.o.p. is divided into three main accounts: the current account, the capital account and the financial account (see Table 2). The current account shows transactions in goods, services and primary and secondary income. The capital account shows transactions in non-produced non-financial assets¹⁴ and capital transfers. The financial account shows net acquisitions of financial assets and net incurrences of liabilities.¹⁵ In the financial account of the b.o.p., transactions in various financial instruments are broken down into five functional categories. These categories take into account some aspects of the relationship between the parties involved and the motivation for investment.

¹² Remaining assets (or remaining liabilities) are the residual items on the balance sheet comprising assets (or liabilities) not included elsewhere, which include in particular what the ESA 2010 calls "other accounts receivable/payable" (AF.8), but also certain other items such as positions in financial derivatives (AF.71 in the ESA 2010) and accrued interest on deposits and loans, which the ESA 2010 recommends should be recorded in the underlying instrument (see also Section 2.5.2). Net amounts receivable/payable in respect of the future settlement of transactions in securities or foreign exchange operations are also included, as are statistical discrepancies which may arise when entries from the statistical balance sheet are derived from the accounting balance sheet. In the MFI balance sheet, most remaining assets/liabilities are reported without a geographical breakdown.

¹³ The statistical requirements of the ECB in the field of external statistics (b.o.p. and international investment position (i.i.p.)) are defined in Guideline ECB/2011/23 of 9 December 2011 (as amended), which is aimed at euro area national central banks (NCBs), in accordance with Council Regulation (EC) No 2533/98 of 23 November 1998 (as amended). Recommendation ECB/2011/24 of 9 December 2011 (as amended) complements Guideline ECB/2011/23 by being aimed at other competent national authorities that are entrusted with the collection and/or compilation of external statistics in their respective countries. Guideline (EU) 2018/1151 of the ECB of 2 August 2018 amending Guideline ECB/2011/23 on the statistical reporting requirements of the ECB in the field of external statistics will take effect from 1 March 2021.

¹⁴ An example of a transaction in a non-produced non-financial asset that may be included in the capital account would be the acquisition of natural resources, fees paid for the transfer of a football player or marketing assets.

¹⁵ While the financial account of the b.o.p. shows transactions in financial assets and liabilities, the i.i.p. shows the outstanding amount of resident financial claims on non-residents and resident financial liabilities to non-residents.

Direct investment is linked to control or a significant degree of influence in the company investee, and tends to be associated with a lasting relationship. As well as capital, direct investors might also provide know-how, technology, management and marketing. Enterprises in a direct investment relationship are more likely to trade with each other and finance each other's activities. The equity that gives rise to control or influence in direct investment also captures other types of investment associated with that relationship.

Table 2

B.o.p. standard presentation

Account	Subaccount/Functional category
Current account (CA)	Goods
	Services
	Primary Income
	Secondary Income
Capital account (KA)	Non-produced non-financial assets
	Capital transfers
Financial account (FA)	Direct investment
	Portfolio investment
	Financial derivatives and employee stock option
	Other investment
	Reserve assets
Net errors and omissions (E&O)	

Source: IMF BPM6.

Portfolio investment is distinctive because the funds are raised through negotiable financial instruments (i.e. debt and equity securities) and therefore the relationship between the issuers and holders is mostly anonymous.

The functional category financial derivatives and employee stock options largely coincides with the corresponding financial instrument class, the exception being the financial derivatives included in reserve assets. The other investment category mainly includes the counterpart entry of other b.o.p. accounts. It also includes financial transactions other than those included in the other functional categories. The financial instruments in the other investment category are mostly non-negotiable, such as currency and deposits, loans and trade credits and advances. Finally, reserve assets are those assets readily available and controlled by monetary authorities for meeting b.o.p. financing needs and for influencing the currency exchange rate.

Each functional category encompasses certain financial instruments (see Table A.3 in Annex 3 for a detailed breakdown); the same instrument can be present in more than one functional category depending on the relationship between the counterparts and their purpose. For example, transactions in equity securities can appear under direct investment or portfolio investment depending on whether this holding on equities represents more or less than 10% of the voting power in the company investee.

The sum of the balances of the current and the capital accounts (CA + KA) represents the net lending (surplus) or net borrowing (deficit) of an economy vis-à-vis the rest of

the world. Due to accounting constraints, this is conceptually equal to the net balance of the financial account (FA), calculated as the net acquisition of financial assets minus the net incurrence of liabilities. Differences between these two alternative measures of net lending/net borrowing are commonly identified as the b.o.p. “net errors and omissions” (E&O).

$$(1) \quad CA + KA + (E\&O) = FA$$

Additionally, each functional category in the financial account is broken down by resident sector, i.e. the sector of the asset holder and of the issuer of the liabilities. Monthly b.o.p. data are broken down into the following sectors: central banks, other MFIs, general government and “other sectors”. These sectors can be divided into MFIs (central banks and other MFIs) and non-MFIs; therefore, we can express equation 1 as follows:

$$(2) \quad CA + KA + (E\&O) = FA_{\text{Non-MFIs}} + FA_{\text{MFIs}}$$

The geographical identification of the counterpart of financial transactions is based on the debtor/creditor principle. For example, in a purchase of a US government bond by a euro area resident from a British bank, the counterpart of the euro area resident (creditor) would be the US government (debtor). For current account transactions, excluding investment income, the counterpart is identified based on the transactor principle; for example, for services it would be the residency of the service provider/consumer and for goods the residency of the seller/buyer of the good.

To illustrate the double-entry mechanism of a b.o.p. transaction, Figure 1 shows the b.o.p. recording of a purchase of umbrellas (€100 million) from China by a euro area resident company. This will be shown as an import of goods in the euro area current account (debits). The counterpart entry will depend on how the purchase is completed or settled. Usually, the resident company will use its deposits in a domestic bank, which will decrease (domestic transaction) and this bank will pay the Chinese exporter by reducing its deposits (assets) abroad (transaction vis-à-vis non-residents recorded). In fact, the two legs of this transaction in the b.o.p. will be included under two different sectors: i) the importer of goods will typically be classified as “other sector” (non-financial corporation); and ii) the (final) financial counterpart will be the MFI executing the payment, through the reduction of its deposits (assets) abroad.

Figure 1
Euro area balance of payments

B.o.p. entries recording a purchase of umbrellas from China by a euro area resident company and paid via a domestic bank

(EUR millions)

Current account	Credits	Debits
Goods: Other sectors		+100
Financial account	Acquisition of assets	Incurrence of liabilities
Other investment (deposits): MFIs	-100	

Continuing with the previous example, if the agreement between the exporter and the importer (resident) is to pay in six months' time, this will be reflected in the b.o.p. statement as a trade credit, i.e. an incurrence of liabilities by the importer (see Figure 2).

Figure 2
Euro area balance of payments

B.o.p. entries recording a purchase of umbrellas from China by a euro area resident company to be paid in six months' time

(EUR millions)

Current account	Credits	Debits
Goods: Other sectors		+100
Financial account	Acquisition of assets	Incurrence of liabilities
Other investment (trade credits): Other sectors		+100

In the above examples, net errors and omissions will be 0 as both legs of the transaction are fully captured. However, in practice, the different components of the b.o.p. are collected autonomously and use different estimation methods; therefore, the two counterparts of a transaction do not always fully match. Some legs may not even be captured at all. This means that at the end of the b.o.p. compilation process for a particular period, the overall effect of imbalances is presented in the "net errors and omissions" item.

2.3 Intersection of the MFI balance sheet with the balance of payments

As previously mentioned, the aim of the monetary presentation of the b.o.p. is to link changes due to transactions in the consolidated MFI balance sheet with transactions of the euro area non-MFIs reported in the b.o.p. These can be linked because:

- the MFI balance sheet and the b.o.p. have the following accounting identities:
 - "assets=liabilities" in the BSI;
 - "current account + capital account (+E&O) = financial account" in the b.o.p.
- both include financial transactions of MFIs with non-residents, which are known as changes in "net external assets" (NEA) in monetary analysis terms.

The monetary presentation of the standard b.o.p. presentation described in Section 2.2 can be obtained in two steps. The first step is to separate within the b.o.p. the transactions in financial instruments carried out by resident MFIs (including the Eurosystem) from those carried out by the other resident sectors (non-MFIs), as shown in equation 2, i.e. to produce a sectoral presentation of the financial account of the b.o.p.

In Section 2.2, we explained that the b.o.p. can be expressed as:

$$(1) \quad CA + KA + (E\&O) = FA$$

As we can separate the transactions in financial instruments performed by MFIs from those performed by non-MFIs, we can describe the net financial transactions of MFIs as the current and capital account transactions minus the net financial transactions of non-MFIs:

$$(2) \quad CA + KA + (E\&O) - FA_{\text{Non-MFIs}} = FA_{\text{MFIs}}$$

Using the MFI balance sheet identity shown in Chart 1, the changes in M3 can be defined as transactions¹⁶ in:

$$(3) \quad M3 = CR + NEA - CGD - LTFL + OA$$

The second step is to combine the equations representing the two statistical statements with the MFI net external financial transactions as a common variable.

As NEA and FA_{MFIs} are conceptually identical, we can make the following substitution in the M3 equation:

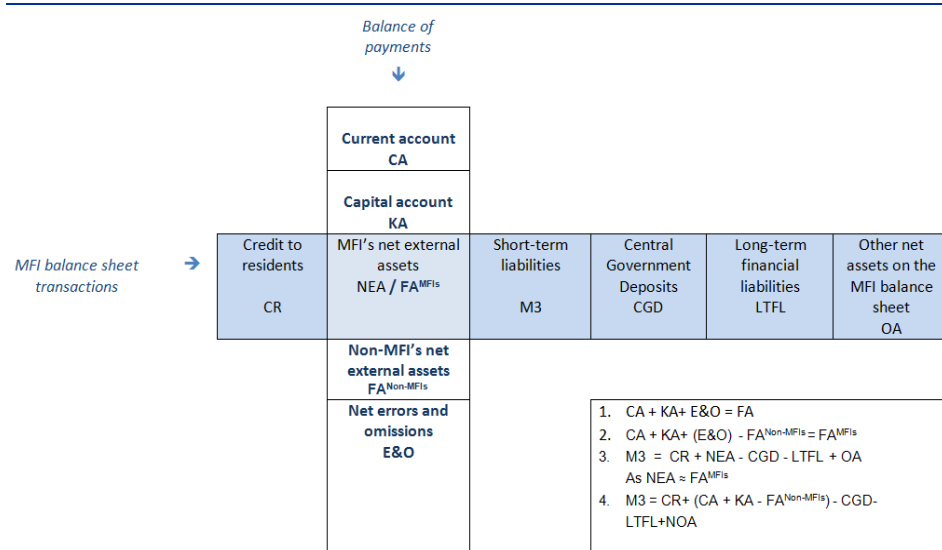
$$(4) \quad M3 = CR + (CA + KA - FA_{\text{Non-MFIs}}) - CGD - LTFL + OA$$

The new identity shows how changes in the monetary aggregate M3 can be explained by components of the MFI balance sheet as well as by b.o.p. transactions in the current and capital account and by b.o.p. financial transactions of resident non-MFIs. This is visualised in Chart 2, where the external transactions of MFIs (NEA / FA_{MFIs}) constitute the intersection of the two statements.

¹⁶ We are using the same notation as that shown in Chart 1. However, from now on we will refer to transactions.

Chart 2

Combined presentation of the MFI balance sheet and the balance of payments



Using the example in Section 2.2 of the import of goods (umbrellas) by a euro area resident, the transaction would have an impact on M3 if the importer paid through a domestic bank to a foreign bank, as shown in Figure 1. Based on equation 4, all else being equal, the transactions in the CA due to the import of umbrellas would be directly reflected in a decrease of M3. However, if the importer agreed with the Chinese seller to pay in six months' time, as reflected in Figure 2, the transaction would not have an impact in M3 at the time of the transaction, as the balance sheet of the resident bank would not be affected initially. Explaining this example using equation 4, the transaction in the CA would be compensated with the transactions in the FA by non-MFIs as the delayed payment would appear as an increase in the company's liabilities.

The dynamic would be similar for a purely financial transaction. For example, the impact on M3 of a merger of two non-financial corporations (a resident and a non-resident) would depend on how the transaction is settled. If the merger only involved an exchange of shares or was paid for through a non-resident bank, it would have no impact on the balance sheet of domestic MFIs and consequently would have no impact on M3. Conversely, if the shares were paid for by the resident corporation through the domestic banking sector, the transaction would have an impact on the balance sheet of domestic MFIs, as well as on M3, as the deposits that the resident corporation holds in the domestic bank would be reduced.

A simple example of a household acquiring a foreign asset from a foreign holder provides the basis for this interpretation. Figure 3 illustrates how these transactions would be reflected in the balance sheets of the residents involved in the operation as well as in the balance sheet of the US bank. As payment for its purchase, the household instructs its bank to make a monetary transfer to the seller. In doing so, MFI net external assets decline, either because the foreign seller receives a deposit in the euro area bank acting as intermediary (i.e. an increase in MFI external liabilities) or

because the euro area bank reduces part of its assets abroad to pay (or issue the instruction to pay) the seller in its home country (i.e. a decrease in the bank's external assets). The reverse occurs when the household sells an asset. This analysis would be similar for exports and imports of goods and services.

Explaining this example using equation 4, the purchase of the foreign asset would be included in the FA of the non-MFIs and would have a direct effect by decreasing M3.

$$M3 = CR + (CA + KA - FA^{(non-MFI)}) - CGD - LTFL + OA$$

Figure 3
Balance sheets of the parties involved

Euro area household buys a US bond from a US bank – direct bilateral correspondent banking

	A	EA household	L	A	EA Bank	L	A	US Bank	L
t_0		Deposit at EA Bank	Loan from EA Bank		Loan to EA household	Dep. of EA household		US gov't Bond	Deposit of US Gov't
t_1		US gov't Bond	Loan from EA Bank		Loan to EA household	Deposit of US Bank		Deposit at EA Bank	Deposit of US Gov't
		PI ↑			NEA ↓				

Note: Items in blue represent changes in period 1 with respect to period 0. NEA stands for "MFI net external assets" and PI stands for portfolio investment.

As a general rule, only transactions of non-MFIs in the balance of payments settled through the domestic MFIs would affect M3. The actual impact of a transaction on M3 depends on how the other items of the MFI consolidated balance sheet affect the transaction.¹⁷

An example of such a situation is a euro area resident (e.g. household) selling foreign bonds to a resident bank (increase in MFI net external assets) and investing the proceeds in long-term securities issued by a domestic bank (increase in long-term financial liabilities). These two counterparts balance each other out/offset one another and do not affect M3 (see Figure 4). The above examples are very useful for rationalising the contribution of the external sector to the dynamics of broad money growth.

¹⁷ There are two reasons why MFI net external assets can change: (i) resident non-MFIs conduct transactions with the rest of the world in assets (or goods and services) not issued/produced by a resident MFI; or (ii) MFIs conduct transactions with the rest of the world in instruments issued by the domestic non-MFI sector. The first case includes the above-mentioned example and would likely lead to a decline in M3, as the amount of deposits held by euro area residents other than MFIs would be reduced (unless the household used longer-term deposits or sold a longer-term bond or share issued by an MFI or any other asset to finance the transaction). The second case would typically lead to a rearrangement in the composition of the asset side of the MFI balance sheet, with no direct impact on M3 (a typical case would be an MFI purchase of a domestic or foreign government security from a foreign holder). For specific details, also refer to previous sections.

Applying this example to equation 4, the sale of the foreign asset by the euro area (EA) household would be included in the FA of the non-MFIs and the purchase of a debt security issued by the EA bank would not be a balance of payments transaction. However, it would be reflected as an increase in the long-term financial liabilities' counterpart. These two effects would balance each other out/offset one another and would not have an impact on M3.

$$M3 = CR + (CA + KA - FA^{NON-MFIs}) - CGD - LTFL + OA$$

Figure 4
Balance sheets of the parties involved

Euro area household sells a US bond (issued by a bank) to an EA bank and buys a long-term bond issued by the EA bank

	EA household		EA Bank		US Bank	
	A	L	A	L	A	L
t_0	US bond	Loan from EA Bank	Loan to EA household	Dep. of EA household	US gov't Bond	US bond
t_1	EA bank LT securities	Loan from EA Bank	US bond	Long-term securities	US gov't Bond	US bond
	PI ↓		NEA ↑ LTFL ↑			

Note: Items in blue represent changes in period 1 with respect to period 0. NEA stands for "MFI net external assets", LTFL stands for long-term financial liabilities and PI stands for portfolio investment of non-MFIs.

3 Integrating data from the balance of payments with those from the MFI balance sheet

3.1 Consistency between datasets

In principle, the b.o.p. and BSI datasets comply with the relevant international statistical standards. Therefore, they are also consistent with each other, using the same definitions for institutional units, residency and instruments, as well as other concepts and principles. Nonetheless, a number of differences can be identified in the practical implementation of these standards, which are accepted for the sake of reducing the reporting burden. These differences are related to the collection methods/systems, the deadline for reporting data, the required details and simplifications in either one of the reporting systems.

In this context, one of the major challenges of the above-mentioned theoretical framework is the limitations regarding the identification of certain MFI transactions vis-à-vis non-residents in BSI statistics, in particular for securities issued by MFIs.

Differences in the recording of securities issued by euro area MFIs and held by non-euro area residents

In general, it is not easy to identify the residency of the holders, in particular when intermediaries are involved. This difficulty is resolved differently in b.o.p. and BSI statistics, taking into consideration the main focus of the dataset and its respective constraints. Table A.5 in Annex 3 shows that the availability of data on equity and debt security liabilities vis-à-vis non-euro area residents is different in both sets of statistics.

In monetary statistics, the instruments included in M3, such as: (i) money market fund shares; and (ii) debt securities with an original maturity of less than two years, are broken down by residency of the holder, in most cases based on information relating to the first known purchaser. However, instruments that are not included in M3, such as liabilities on: (i) equities (excluding money market fund shares); and (ii) debt securities with an original maturity of more than two years, are collected without a breakdown by residency of the holder.

In b.o.p. statistics, however, a residual approach is taken to identify securities held by non-residents. B.o.p. compilers collect information for holdings (of MFI debt securities) by all euro area resident sectors, which they deduct from the total securities issued by the euro area MFIs. The residual securities are those issued by MFIs and held by non-euro area residents. This approach is used for MMF shares, equity, and short and long-term debt securities.

As depicted in Chart 3a, large net purchases/sales of debt securities issued by MFIs and held by non-euro area residents are more frequent than net purchases/sales of equities. The differences in the estimation of the geographical breakdown and the large volume of transactions in debt securities make this item a potential source of large discrepancies when defining net external assets in both sets of statistics. Chart 3b shows that these discrepancies are generally larger than those for MMFs and equity, and strongly influence the trend of total discrepancies for securities issued by MFIs in BSI and b.o.p. statistics.

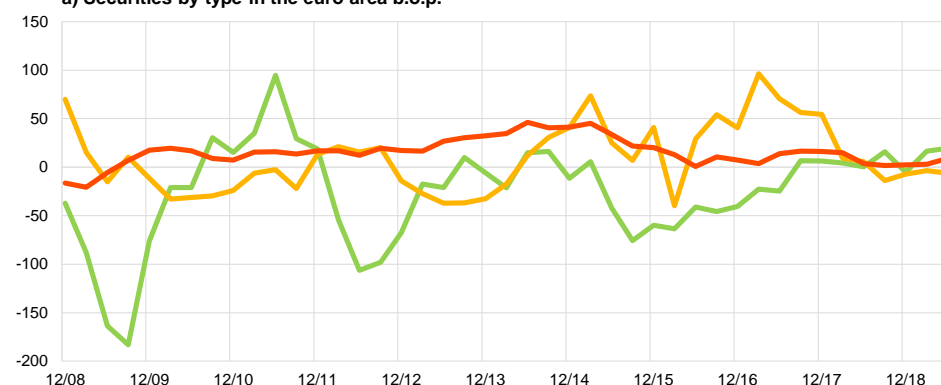
Chart 3

Securities issued by euro area MFIs and held by non-residents

(EUR billions; four-quarter cumulated transactions)

— Debt securities
— MMF shares
— Equity securities

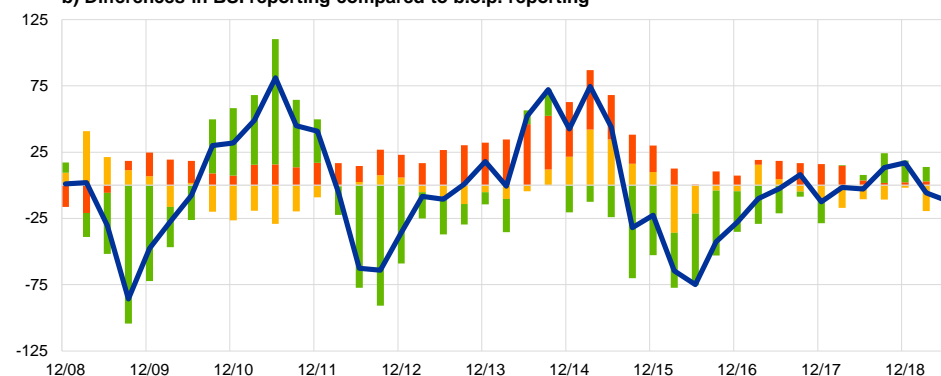
a) Securities by type in the euro area b.o.p.



(EUR billions; four-quarter cumulated transactions)

— Differences total securities
— Differences (MMF shares)
— Equities (only b.o.p.)
— Differences (debt securities)

b) Differences in BSI reporting compared to b.o.p. reporting



Source: ECB.

A comparison of MMF shares reveals some discrepancies due to the different compilation methods in b.o.p and in MFI balance sheet statistics. Although there is in principle little trading of MMF shares in secondary markets, the intervention of intermediaries buying, holding and selling shares/securities on behalf of their clients can make it difficult to identify the residency of the actual holders. In such cases, the first counterpart – the custodian or other intermediary – may be known, but the final investor is often unknown. Identifying residency becomes increasingly complicated as

the length of the chain of intermediaries increases. Therefore, the residual approach used for b.o.p. figures may be more accurate than the respondent information based on the first known counterpart used for BSI statistics. The cumulative discrepancies for a 12-month period are around €25 billion but tend to balance out over time (see Chart 3b).

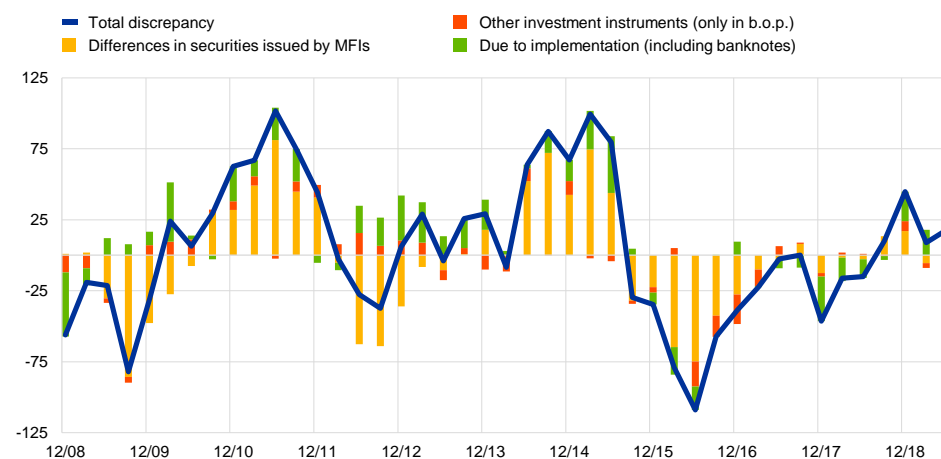
As mentioned previously, BSI statistics do not record the residency of holders of equity issued by MFIs, so they are not included under net external assets. MFI equity is included as capital and reserves under the counterpart long-term financial liabilities. However, b.o.p. statistics include these equities under two different functional categories: direct and portfolio investment. Except for direct investors, the residency of the holder is usually unknown to the issuing MFI (which is the statistical reporter). Therefore, the geographical breakdown of MFI equity held by non-residents needs to be calculated following a residual approach. Chart 3a shows these figures, which for the ten years under analysis reflect mostly inflows or net purchases of MFI equity by non-euro area residents. Chart 3b shows how this component contributes to the total discrepancies between BSI and b.o.p. for securities issued by euro area MFIs. These discrepancies can periodically reach large values, such as in the second quarter of 2014, when net purchases by non-residents of MFI equity reached €20 billion.

Section 3.2 explains how the available b.o.p. data on securities issued by MFIs could be used to improve identification of the NEA counterpart.

Chart 4

Differences in MFI net external assets –BSI minus b.o.p.

(EUR billions; four-quarter cumulated transactions)



Source: ECB.

Chart 4 shows a summary of the differences between the two datasets, the source and the relevance of those differences. The main differences occur when recording securities issued by resident MFIs and held by non-residents, which display very cyclical behaviour. The differences explained by “Other investment instruments” reflect MFI transactions vis-à-vis non-euro area residents that are included under other net assets (OA), as there is no geographical counterpart in BSI statistics. The third set of differences cover differences in timing and implementation that may lead to temporal discrepancies due to data vintages, which tend to disappear over time. They

also include the different treatment of euro banknote holdings. Annex 3 provides further detailed explanations.

3.2 Defining enhanced net external assets

Given the methodological consistency between b.o.p. and MFI balance sheet statistics, information available from the b.o.p. dataset can help to further identify/define net external assets. For the purposes of this enhancement, the current compilation of M3 is taken as a basis in spite of certain differences explained in the previous chapter. Therefore, based on the b.o.p. data available on a monthly basis, this chapter describes the enhancements of the net external asset counterpart of M3 by introducing some reclassifications from/to other counterparts, such as long-term financial liabilities.¹⁸ The following reallocations are considered in this enhancement:

- Net purchases/sales by non-euro area residents of equity issued by euro area MFIs available in b.o.p. can be deducted from the long-term financial liabilities counterpart and included under net external assets.
- Net purchases/sales by non-residents of debt securities issued by euro area MFIs can also be removed from long-term financial liabilities and allocated to net external assets. In theory, only transactions in debt securities with an original maturity of over two years should be reclassified as net external assets, as those with a shorter maturity are already included in NEA. However, the b.o.p. has no information on the maturity breakdown (for one to two years) of traded debt securities. So, in practice, external transactions on debt securities with maturities of up to two years can be calculated by deducting from the total transactions on debt securities (from the b.o.p.) those with original maturities of up to two years (from the MFI balance sheet statistics).

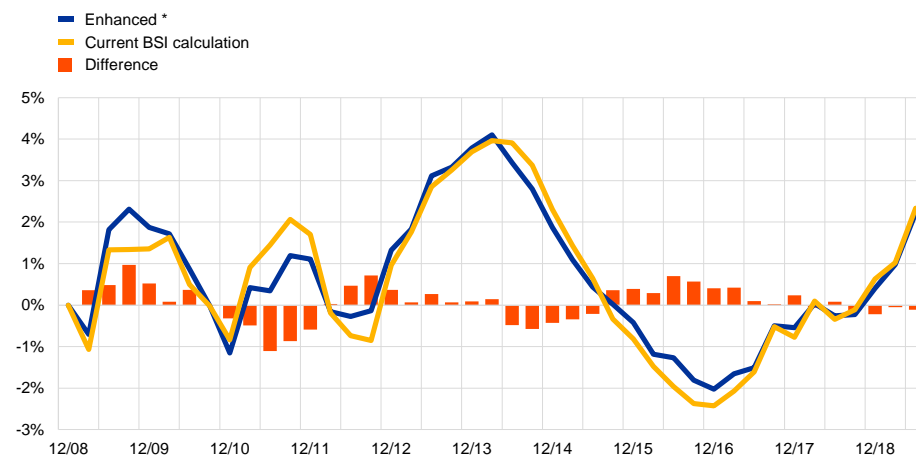
From an analytical point of view, using available b.o.p. data for the enhancement of the M3 counterparts is useful for observing turning points and more accurately analysing the effect of the different counterparts in M3. In this way, the definition of the net external assets of BSI and b.o.p. are closer and the analytical power of the monetary presentation improves. Considering data from 2008 onwards, the effect of the enhancement in the net external assets is rather cyclical, being negative in some periods and positive in others, as illustrated in Chart 5. For example, a significant correction of the MFI net external assets took place in the second part of 2014, when the enhanced net external assets started decreasing before the official calculation. This was due to the fact that a significant part of the recapitalisation of some banks in Italy, Greece and Spain was due to share purchases by non-euro area residents.

¹⁸ See the implementation of the enhanced MFI net external assets in Annex 1.

Chart 5

Net external assets as a counterpart of M3

(Four-quarter cumulated; annual percentage changes; percentage point contributions)



Source: ECB.

A limitation of these enhancements is that they can only be performed three weeks after the publication of the official monetary aggregates and its counterparts, as the monthly b.o.p. is published later. However, a revision of the MFI net external assets in the light of the later publication of b.o.p. data for the month could be of analytical value.

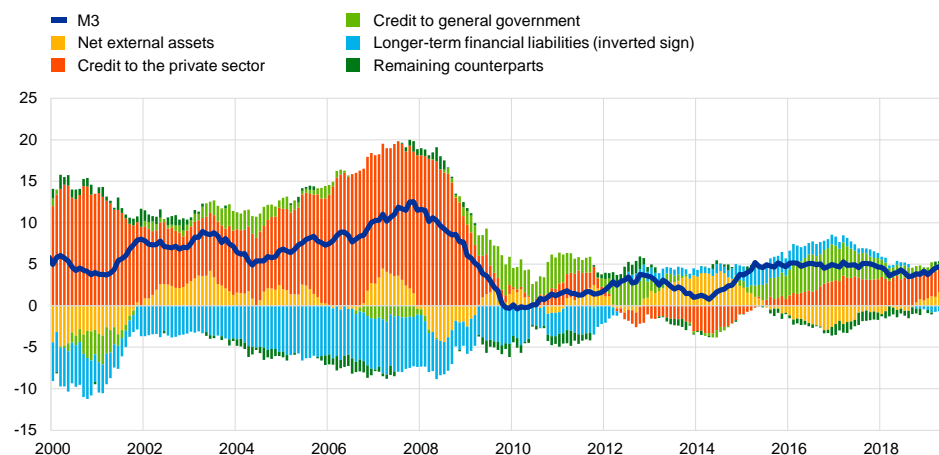
4 External transactions and monetary dynamics since 2008

4.1 External monetary flows: a key item in the analysis of broad money growth

The counterparts framework outlined in Section 2.1 reveals that external flows have been a significant factor in explaining monetary dynamics in the euro area since the creation of the monetary union, and that their relative importance has significantly increased in recent years. Since January 1999, the contribution of MFI net external assets to the annual growth rate of M3 (the reference broad money aggregate for the ECB) has fluctuated between ± 5 percentage points. With the strong moderation of credit flows since the Great Recession, money inflows and outflows to and from the rest of the world have become a key determinant of broad money growth in the euro area (see Chart 6). As such, the analysis of such flows has come to the fore of the ECB's monetary analysis.

Chart 6
M3 and counterparts

(Annual percentage changes; percentage point contributions)



Source: ECB and ECB calculations.
Note: Latest observation: June 2019.

In its most basic formulation, the monetary analysis framework is grounded in the long-term relationship between the money balances held by the public (i.e. the money-holding sector, which comprises all resident sectors except MFIs and central governments) and the inflation rate measured by consumer prices. This relationship holds only between the low frequency components of these two variables and needs to take into account the interaction with wealth accumulation and asset prices. In other words, a crucial and challenging task in monetary analysis is to disentangle low frequency (or trend) movements in the broad monetary aggregate M3 from those due to regular business cycle dynamics or shorter-term volatility, as well as the nature and

purpose of the existing money balances. In this context, the monetary presentation of the b.o.p. facilitates the task of tracing the origin of changes in money balances that result from the interaction of money holders with the rest of the world.

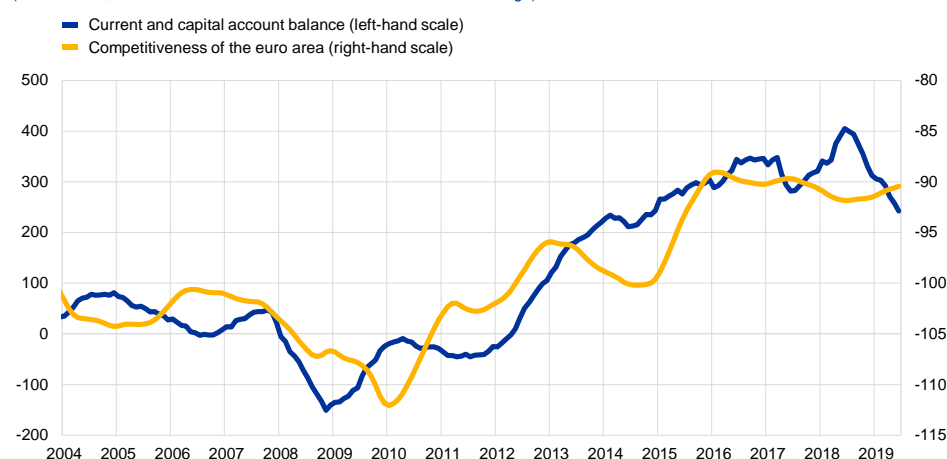
Taking a broader perspective, monetary flows between euro area money holders and the rest of the world typically reflect payments relating to two main types of transactions: (i) goods and services transactions, as well as the remuneration of income produced by foreign assets (mostly captured under the current account); and (ii) trading of financial instruments (included in the financial account). These two broad types of transactions tend to reflect different underlying economic factors.

Net exports of goods and services reflect the balance between external demand (driven by the degree of competitiveness of the domestic products vis-à-vis the rest of the world (see Chart 7)) and the internal demand (driven by the intertemporal allocation between consumption and saving, which in turn is affected by policy and demographic factors). By contrast, financial investments of non-MFIs, particularly those classified under portfolio investment, mainly reflect yield fluctuations¹⁹ and risk considerations, as well as the availability of securities in the market (see Charts 8 and 9). This simplified distinction helps to explain why flows relating to current account transactions tend to display a significantly higher persistence than those relating to financial, and in particular portfolio, investment (see Chart 10).

Chart 7

Euro area current account balance and competitiveness

(EUR billions; 12-month cumulated transactions; 12-month index average)



Source: ECB and ECB calculations.

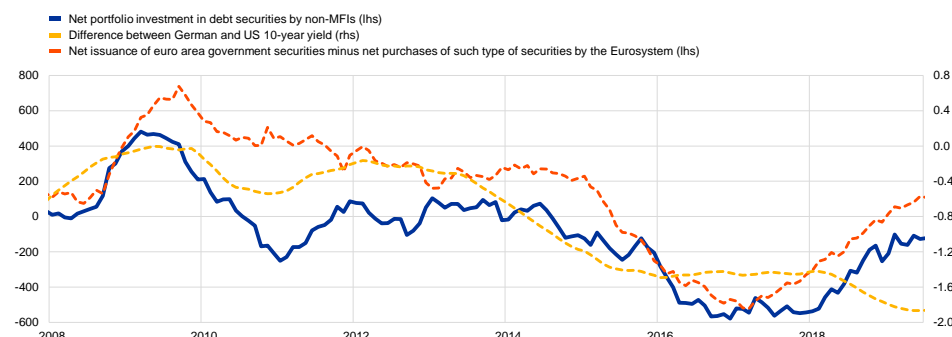
Notes: The competitiveness of the euro area illustrated by the real effective exchange rate against a group of 19 trading partners, deflated by the unit labour costs of the total economy. Interpolated from quarterly series. Latest observation: June 2019.

¹⁹ More persistent trends in yield differentials may also be due to secular differences in the respective equilibrium rates, e.g. due to productivity or demographic trends, illustrating the interconnectedness between current and financial accounts, also at the sectoral level.

Chart 8

Net portfolio investment in debt securities and its determinants

(12-month cumulated transactions in EUR billions; 12-month average in percentage points)



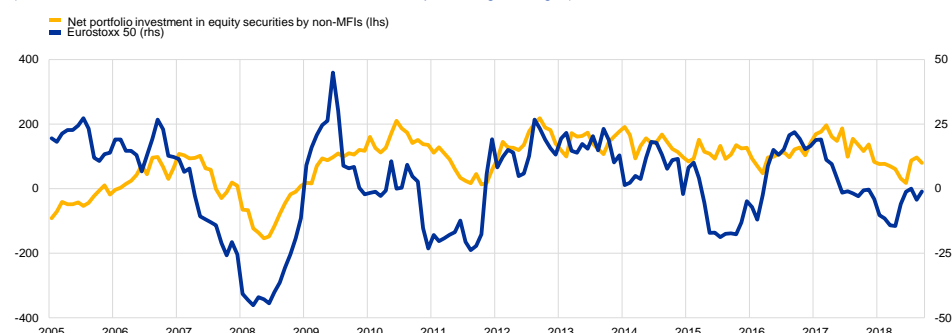
Source: ECB and ECB calculations.

Notes: Equity investment includes investment fund shares. Net portfolio investment is displayed with a negative sign in order to match the direction of the related monetary flows. Latest observation: June 2019.

Chart 9

Net portfolio investment in equities and its determinants

(12-month cumulated transactions in EUR billions; annual percentage changes)



Source: ECB and ECB calculations.

Notes: Net portfolio investment is displayed with a negative sign in order to match the direction of the related monetary flows. Latest observation: June 2019.

A proper interpretation of MFI net external assets as a tool for tracking net monetary inflows into the euro area must also take into account that while all monetary flows between euro area money holders and non-euro area residents cause a change in the net external assets of euro area MFIs (provided that such flows are intermediated by a euro area bank), not all changes in MFI net external assets are reflected in an increase or decrease in M3. Indeed, when MFIs trade a domestic non-MFI security with the rest of the world, this is just reflected as a swap between domestic and (net) external assets of the MFIs, leaving M3 unchanged, at least in the first stage. An example of this case is the Eurosystem's acquisition of euro area government debt securities from foreign investors in the context of the APP, which is discussed in the following section. Section 2.3 includes other specific examples illustrating the dynamics between MFI net external assets and M3 (or the rest of its counterparts).

4.2 Recent developments in external monetary flows

The considerations above provide guidance in interpreting developments in external monetary flows over the past decade. The period from early 2008 to early 2012 was characterised by relatively short-lived fluctuations in MFI net external assets, especially compared with those after 2012.²⁰

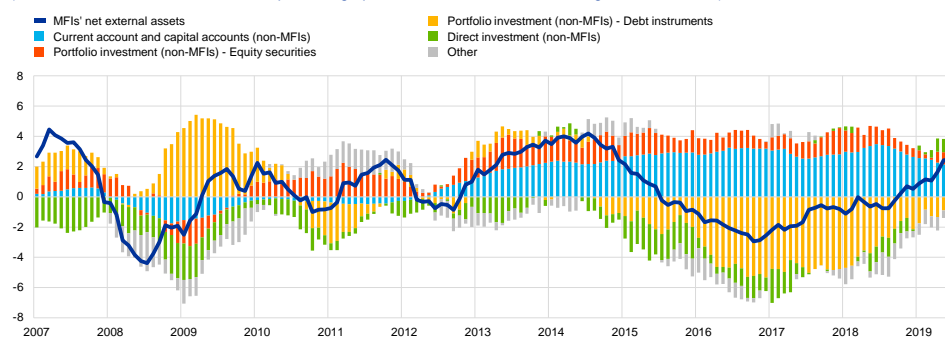
In early 2008, the decline in global demand, increasing uncertainty and decreasing stock prices resulted in the current account turning moderately negative and foreigners selling euro area equities. This added to the typical euro area net direct investment abroad, the overall result of which was net monetary outflows from the euro area (see Chart 10).

Chart 10

Monetary presentation of the euro area balance of payments

MFI net external assets and mirror b.o.p. transactions

(12-month cumulated transactions as percentage point contributions to the annual growth rate of M3)



Source: ECB and ECB calculations.

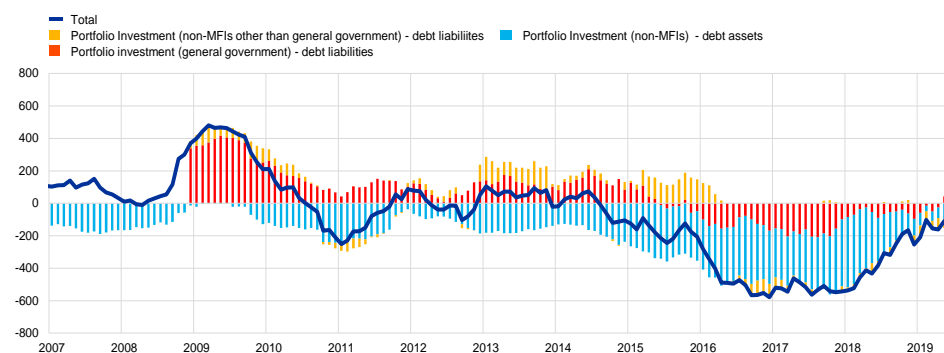
Notes: Net portfolio items of the financial account are displayed with a negative sign in order to match the direction of the related monetary flows. Equity investment includes investment fund shares. The item "Other" includes other investment, financial derivatives, errors and omissions, as well as methodological discrepancies between BSI and b.o.p. statistics. MFI net external assets are from BSI statistics. Latest observation: June 2019.

External monetary inflows into the euro area quickly turned positive as euro area governments responded to the recession with strong fiscal stimuli. The increased issuance of government debt securities attracted foreign investors and may also have helped to reduce euro area investments abroad (see Chart 8). These inflows were reinforced by retrenchment from international markets following the collapse of Lehman Brothers in late 2008.

²⁰ This section does not use in its analysis the enhanced MFI net external asset presented in Section 3.3, as we thought it would be interesting to show data from 2006, and the enhanced MFI net external assets are currently only available from 2008. The use of the latter would, in most cases, reduce the residual component shown as "Other" in Chart 10, thus would not alter the explanation of the main drivers of the enhanced net external assets.

Chart 11**Net portfolio investment of non-MFIs in debt securities**

(12-month cumulated transactions in EUR billions)



Source: ECB and ECB calculations.

Notes: Annual flows for the sectoral breakdown of portfolio investment liabilities can only be shown from December 2008, as the first breakdown was published in January 2008. Net portfolio investment is displayed with a negative sign in order to match the direction of the related monetary flows. Latest observation: June 2019.

With the pick-up in global demand and the reactivation of international supply chains at the end of the Great Recession, the moderate current account deficit also disappeared. As a result, dynamics in external monetary flows until 2012 mostly mirrored that of portfolio investment, typically driven by yield as well as risk considerations. The decline in the relative yield of the German Bund – the long-term reference rate in the euro area – is likely to have been an important incentive for euro area residents to invest abroad again and for foreigners to reduce their net purchases of euro area securities. The latter was exacerbated by the euro area sovereign debt crisis, which unfolded in two waves: spring 2010 and summer 2011. In the months following those episodes, non-euro area residents sold net amounts of euro area government securities despite the fact that the net supply of such securities was still growing at a fast pace, resulting in a temporary increase in home bias of the Monetary Union.²¹

The announcement that the ECB could conduct Outright Monetary Transactions (OMTs) in the secondary markets of euro area government bonds led to a drastic change in the sentiment of international investors towards the euro area after the summer of 2012.^{22,23} Their purchases of euro area equity and debt securities surged (see Chart 11). In parallel, the structural reforms and adjustment policies implemented in many euro area countries brought about a sustained improvement of the external competitiveness of the euro area, and thus a current account surplus started to develop.²⁴ Weak internal demand relative to that of the rest of the world also reinforced this development, particularly in the initial years of this phase. Portfolio

²¹ Brutti and Sauré (2016) analyse the opposing preferences of domestic and foreign investors in the countries most affected by the sovereign crisis.

²² On 6 September 2012, the Governing Council of the ECB decided to introduce the option of undertaking OMTs in secondary markets for sovereign bonds in the euro area. This tool aims to ensure effective transmission of the Eurosystem's monetary policy and, thereby, to secure the necessary conditions for the effective conduct of the single monetary policy within the euro area.

²³ Bubeck, Habib and Manganelli (2018) find that President Draghi's "Whatever it takes" speech was associated with the largest positive surprise to average euro area long-term rates.

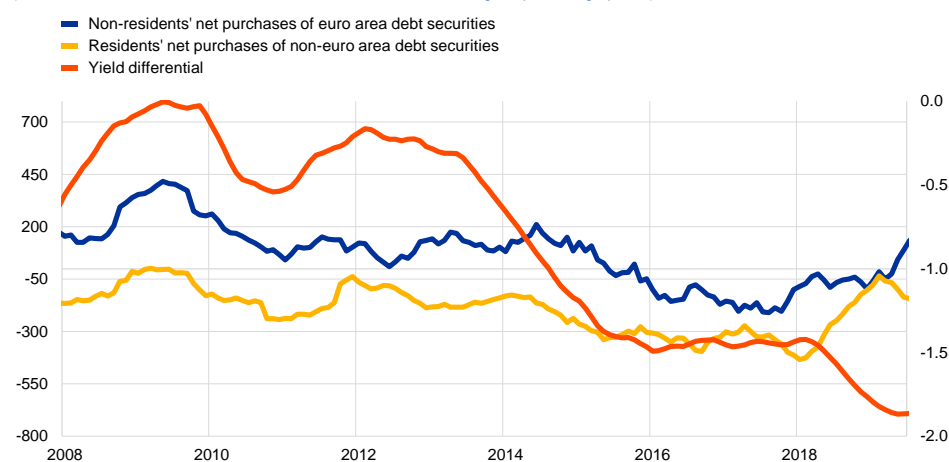
²⁴ Galstyan (2019) shows that there is a link between the increase in the current account surplus of the euro area and income shift from wages to corporate profits.

inflows and the current account surplus resulted in about two years of strong external monetary inflows, which became the only source of solid money creation in the euro area. From late 2013 to late 2014, MFI net external assets contributed between 3 and 4 percentage points to the annual growth of euro area M3. This offset the substantially negative contribution of credit to the private sector, thus preventing broad money growth from falling into negative territory (see Chart 6). Reflecting the high degree of competitiveness of the euro area and buoyant global demand, the current account surplus has continued to be a solid source of monetary inflows.

Chart 12

Portfolio investment in debt securities

(12-month cumulated transactions in EUR billions; 12-month average in percentage points)



Source: ECB and ECB calculations.

Notes: Assets (and therefore also net amounts) of the financial account are displayed with a negative sign in order to match the direction of the related monetary flows. Latest observation: June 2019.

By contrast, dynamics in portfolio investment turned around in the second half of 2014, following the announcement of the ECB's credit easing package, the introduction of a negative interest rate on the ECB's deposit facility and the expectations and final announcement of the APP.²⁵ These measures introduced a significant monetary easing impulse to the euro area economy, having a rapid impact on bank and market rates, and reinforcing the decline in government bond yields.²⁶ The impact on portfolio investment flows was almost immediate.

Portfolio investment in debt securities continued to drive developments in MFI net external assets in the APP period. The implementation of the APP began in March 2015, with the size of monthly net asset purchases amounting to €60 billion a month. In order to support the pass-through of the monetary policy impulse to the real economy, the programme was expanded one year later to also include private sector securities among the purchases. The size of the total average monthly purchases was also temporarily increased. It reached €80 billion between April 2016 and March 2017, before returning to €60 billion by the end of 2017. Overall, the decline in the long-term

²⁵ The [credit easing](#) package and [the introduction of a negative deposit facility interest rate](#) were announced on 5 June 2014. The expanded [APP](#) was announced on 22 January 2015. See the [APP](#) for further details.

²⁶ See Altavilla, Carboni, and Motto (2015).

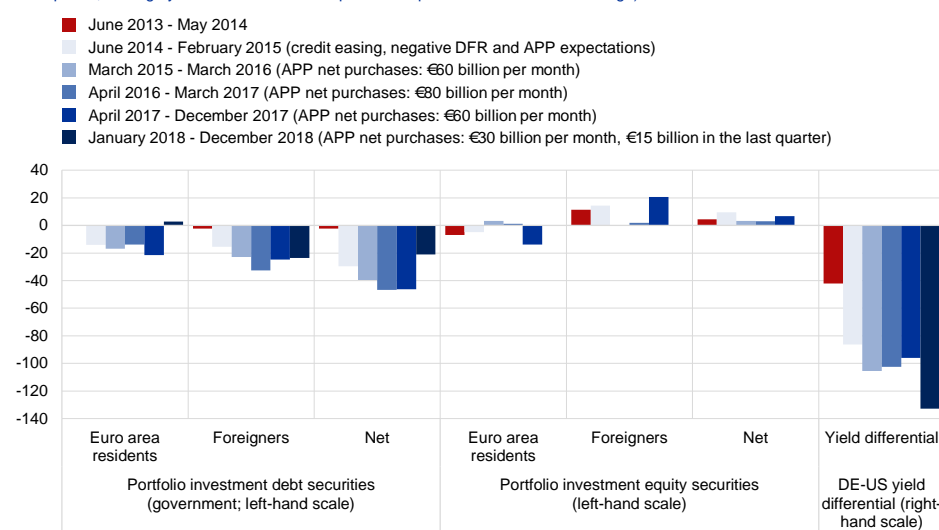
yield differential between the euro area and the rest of the world, propitiated by the large purchases of government securities carried out by the Eurosystem, incentivised both resident and non-resident investors to rebalance away from euro area debt securities.²⁷ By and large, outflows from debt securities were not offset by inflows into equities (see Chart 13).

Net portfolio outflows in debt securities (by both residents and non-residents) began to decline in the first few months of 2018, following the reduction in monthly APP purchases from €60 billion to €30 billion in January 2018. However, a decoupling between the behaviour of these two groups of investors emerged after May 2018, with non-residents returning to sell euro area debt securities. This decoupling coincided with a sharp repricing of the Italian sovereign debt risk. In addition, the renewed decline in the long-term yield differential vis-à-vis the United States and growing macroeconomic uncertainty reinforced the move of non-residents away from euro area debt securities.²⁸

Chart 13

Net purchases in portfolio investment and yield differential over the APP period

(Left-hand side: EUR billions; average monthly transactions in each period compared to historical average transactions; right-hand side: basis points; average yield differential in each period compared to the historical average)



Source: ECB and ECB calculations.

Notes: Assets (and therefore also net amounts) of the financial account are displayed with a negative sign in order to match the direction of the related monetary flows. The historical averages are calculated for the period January 2006 (first available period for the relevant b.o.p. series) and May 2014, the month before the announcement of the credit easing package and the implementation of a negative remuneration of the ECB deposit facility.

By contrast, the annual monetary outflows relating to the purchases of foreign debt securities by euro area residents continued to decline. The behaviour of euro area residents in this period is consistent with the generalised increase in investors' risk aversion, particularly (arising) after the summer, as well as with the tensions affecting

²⁷ See for instance Albertazzi et al. (2018), Bergant et al. (2018) and Adalid and Palligkinis (2016), who analyse the portfolio behaviour of the various euro area institutional sectors in response to the ECB's public sector purchase programme (PSPP).

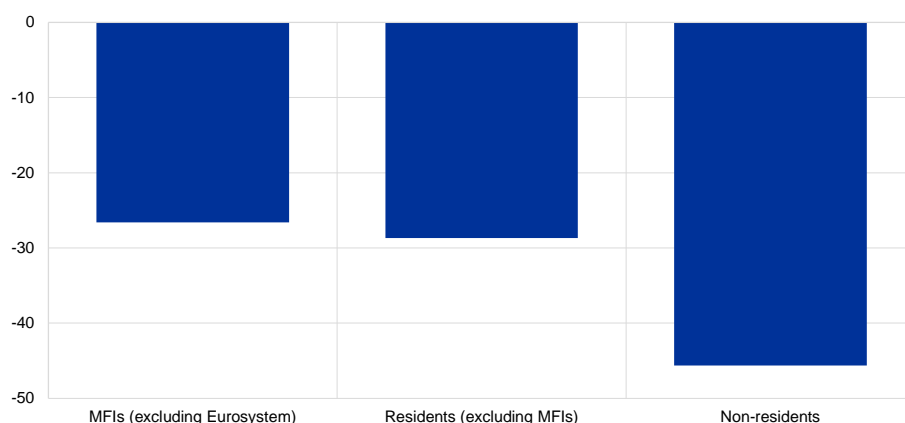
²⁸ Other factors, such as the inaction of the Tax Cuts and Jobs Act, which was passed by the US Federal Government in December 2017 and led to a repatriation of accumulated foreign earnings by US-based parent companies of multinational enterprises, also supported monetary outflows by non-residents during 2018 (see Box 1 of the [ECB Economic Bulletin, Issue 4/2019](#)).

the Italian sovereign, which led Italian residents to redirect part of their investment flows towards domestic government securities. Both aspects reinforced the typical home bias affecting resident investors.

Chart 14

Impact of the PSPP on net purchases of euro area government securities by sectors other than the Eurosystem

(As a percentage of total purchases of euro area government securities by the Eurosystem between March 2015 and December 2018)



Sources: ECB and ECB calculations based on Adalid and Palligkinis (2016).
Note: Latest observation: December 2018.

The period of APP net asset purchases ended in December 2018. Overall, non-residents displayed a somewhat stronger reaction to the Eurosystem's APP purchases (see Chart 14). Two factors may explain this: first, the above-mentioned home bias affecting resident investors; second, within euro area instruments, foreign investors seem to have a strong preference for government securities (in fact, the bulk of foreign investment flows into euro area debt securities has historically consisted of government securities (see Chart 11)). This may explain why, despite being the largest net sellers of government securities (reflecting the strong and inelastic demand for these securities exerted by the Eurosystem), they did not heavily reinvest those proceeds in other euro area instruments.

5 Conclusion

In essence, the monetary presentation of the balance of payments (b.o.p.) provides a consistent framework, whereby changes in the net external position of the resident MFIs are represented as a mirror image of changes in the net external position of the resident non-MFI sector. This presentation of the b.o.p. reflects the unique role of MFIs in cross-border financial intermediation. In fact, MFIs play a pivotal role in the exchange of assets, goods and services by all the other resident sectors and are the sole issuers of monetary instruments.

The update and implementation of the international manuals – BPM6 and ESA 2010 – have improved the consistency between BSI and b.o.p. statistics. However, owing to the different focus and purpose of each set of statistics, some discrepancies remain. Future developments are expected to reduce these differences. For example, a single data source would reduce data differences in the geographical area of the holder of euro area MMF share liabilities or transactions in financial derivatives. The European System of Central Banks (ESCB) is working towards an Integrated Reporting Framework (IReF) for credit institutions. The idea behind this project is to integrate, as far as possible, existing ESCB statistical data requirements (e.g. BSI and b.o.p. data) into a single framework, applicable across countries and data domains. This will improve comparability of data across datasets, as there will be a single set of concepts and definitions as well as a data collection framework free from redundancies.

For the time being, complementing net external assets of BSI with b.o.p. data improves the consistency of both datasets as far as securities are concerned. Although this enhancement comes with the publication of the monthly b.o.p., which takes place three weeks after the publication of the monetary aggregates and its counterparts, it is still very useful for improving its analytical value. In particular, from 2008 to 2018, the b.o.p. figures show systematic net purchases of MFI shares by non-residents (mostly relating to recapitalisation operations), while net purchases of MFI debt securities by non-residents show a rather unsystematic pattern.

A proper interpretation of MFI net external assets as a tool for tracking net monetary inflows into the euro area must also take into account that all monetary flows between euro area money holders and non-euro area residents cause a change in the net external assets of euro area MFIs (provided that such flows are intermediated by a resident bank). Nonetheless, not all changes in MFI net external assets are reflected in M3, as they can also be offset in other M3 counterparts.

The first step to including external flows in the monetary analysis is to understand the nature of the flows between resident money holders and the rest of the world. This is made possible thanks to the monetary presentation of the b.o.p. that can provide information on the nature of these transactions and therefore guidance on the persistence of the monetary signal stemming from external flows.

This distinction was crucial in the second part of the decade, when monetary inflows relating to a growing and sustained current account surplus coexisted with those

relating to portfolio transactions. As such, the former displayed a significant persistent trend, with only minor fluctuations, while the latter fluctuated strongly, showing a strong responsiveness to financial and monetary policy considerations.

By creating a conceptual framework that links the portfolio decisions of resident and non-resident sectors with developments in broad money growth, the monetary presentation of the b.o.p. has provided highly valuable information, which has contributed to the understanding of the transmission of non-standard monetary policy measures. With the headwinds currently facing global trade and the high amount of global liquidity created over the past few years, the monetary presentation of the b.o.p. will remain a key tool that can inform the monetary analysis of the ECB.

Annex 1

Table A.1 presents the monetary presentation of the balance of payments that combines monthly data from BSI and b.o.p. statistics.²⁹ The first three columns include information relating to the MFI net external assets. As defined in Section 3.2, the enhanced MFI net external assets incorporate an adjustment to the MFI net external assets (BSI) based on information regarding MFI long-term financial liabilities held by non-residents available in the b.o.p. statistics. Column 1 reflects the enhanced MFI net external assets, column 2 the published MFI net external assets as counterparts of M3, and column 3 the net transactions by non-euro area residents in equity and debt securities issued by euro area MFIs available in the b.o.p. and included under MFI long-term financial liabilities in the M3 counterparts. Columns 4 to 13 include b.o.p. transactions carried out by non-MFIs that are mirroring the net transactions of the MFIs. The differences in the enhanced net external assets and the b.o.p. mirror transactions are included together with the net errors and omissions under a column named “Statistical discrepancies”.

Table A.1
Monetary presentation of the euro area balance of payments

	MFI net external assets (enhanced)			Current and capital account balance	B.o.p. items mirroring net transactions by MFIs								Financial derivatives	Statistical discrepancies
	Total	Net external assets (MFI balance sheet)	MFIs long-term financial liabilities held by non-resident (b.o.p.)		Transactions by non-MFIs									
					Direct investment		Portfolio investment				Other investment			
					Assets	Liabilities	Assets		Liabilities		Assets	Liabilities		
							Equity	Debt securities	Equity	Debt securities				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2016	-253.8	-277.1	-23.4	346.1	430.6	334.3	22.4	326.6	70.1	-252.6	55.9	113.8	20.8	-9.2
2017	-91.3	-92.5	-1.2	321.1	247.9	254.5	190.4	412.6	386.8	-130.9	36.1	31.5	25.4	-41.8
2018	59.2	77.9	18.8	312.6	-266.7	-281.0	55.8	103.1	125.0	-151.1	63.2	111.6	96.6	-6.0
2018 Q3	6.7	13.2	6.5	89.7	-83.0	-87.2	17.5	30.7	-2.8	3.1	45.3	44.1	35.0	5.2
Q4	67.5	57.8	-9.8	65.6	-304.9	-197.2	-25.3	-16.3	-2.2	-144.0	-41.6	-28.2	29.6	15.1
2019 Q1	79.0	92.8	13.8	61.5	88.4	32.3	-8.9	52.8	13.2	102.9	43.1	93.7	2.2	-46.9
Q2	126.4	134.4	8.0	25.7	-49.6	9.7	-2.3	69.5	52.3	47.8	15.5	33.4	30.2	20.8
Q3	85.4	61.0	-24.4	93.0	-26.8	-11.3	24.1	76.7	83.9	27.7	29.8	18.3	5.3	-17.2
2018 Sep.	38.6	64.2	25.6	27.4	-102.8	-105.3	6.2	1.5	-6.0	27.5	13.0	8.1	6.7	11.6
Oct.	-9.1	-12.9	-3.8	17.8	12.2	3.2	-23.9	-7.4	-20.2	-9.0	-7.3	9.3	11.7	-24.9
Nov.	64.9	73.8	8.9	13.9	-73.7	-39.6	-3.7	-8.7	-6.9	7.0	2.2	-4.9	16.1	27.4
Dec.	11.7	-3.1	-14.9	33.9	-243.3	-160.8	2.4	-0.1	24.9	-142.0	-36.4	-32.6	1.7	12.6
2019 Jan.	4.7	0.0	-4.7	6.9	66.4	58.5	1.4	19.9	-1.9	47.1	19.7	22.5	0.0	-21.0
Feb.	-1.6	21.5	23.2	18.1	19.2	-2.1	2.5	-0.1	-13.4	46.9	10.1	19.7	-3.1	-42.3
Mar.	75.9	71.3	-4.6	36.5	2.7	-24.2	-12.8	33.1	28.5	8.9	13.4	51.5	5.3	16.4
Apr.	3.1	-6.6	-9.7	11.7	21.0	49.2	3.8	12.3	8.0	2.1	5.4	-8.7	10.6	-6.1
May	58.9	61.3	2.4	-1.3	7.9	14.3	-23.7	21.7	14.1	31.4	8.3	16.5	12.6	10.8
June	64.3	79.7	15.3	15.3	-78.5	-53.9	17.5	35.4	30.1	14.3	1.8	25.6	7.1	16.1
July	42.8	34.6	-8.3	31.0	-16.5	0.9	2.6	29.9	20.9	24.7	-4.6	0.2	8.1	-15.4
Aug.	15.1	-15.1	-30.2	27.6	-21.9	-26.3	-7.3	21.5	17.2	-12.3	11.7	20.7	3.4	-4.5
Sep.	27.5	41.6	14.0	34.3	11.6	14.2	28.8	25.3	45.8	15.3	22.8	-2.6	-6.3	2.7
12-month cumulated transactions														
2018 Sep.	-37.5	-13.2	24.3	375.3	55.4	-59.0	125.7	179.8	208.4	-69.7	93.0	93.9	71.7	-60.7
2019 Sep.	358.3	346.0	-12.3	245.7	-292.9	-166.5	-12.4	182.7	147.2	34.4	46.9	117.2	67.3	-28.1

Source: ECB.

Notes: Data refer to the changing composition of the euro area. For further information, see the General Notes. MFI net external assets enhanced incorporates an adjustment to the MFI net external assets (BSI) based on information of MFIs long-term financial liabilities held by non-resident available in b.o.p. statistics.

²⁹ See [b.o.p. items mirroring net transactions by MFIs](#).

Annex 2

Table A.2

MFI statistics covered by Regulation ECB/2013/33 (July 2015 report)

Frequency	Item	Description	Counterpart sector
Monthly	Deposits and loans	Breakdown of counterparts by MFI sub-sector	Central bank Other deposit-taking corporations
		Identification of intra-group positions for other deposit-taking corporations	Other deposit-taking corporations
	Deposits, repurchase agreements and loans	Identification of non-MMF investment funds	Non-MMF investment funds Other financial institutions
		Separate identification of insurance corporations and pension funds	Insurance corporations Pension funds
	Loans to general government and FVCs	Breakdown by original maturity	General government FVCs
		Up to one year	
		Over one and up to five years	
		Over five years	
	Holdings of government debt securities by original maturity	Identification of government debt securities with an original maturity of up to one year	General government
	Holdings of non-MMF investment fund shares/units and equities	Separate categories previously included in "shares and other equities"	Non-MMF investment funds MFIs Non-MFIs Non-euro area residents
	Loans adjusted for sales and securitisation (new method)	Outstanding amounts and financial transactions	General government Non-MMF investment funds Insurance corporations Pension funds Non-financial corporations Households
Quarterly	Deposits and loans	Sector breakdown of intra-euro area positions vis-à-vis each euro area country	General government Non-MMF investment funds Insurance corporations Pension funds Other financial institutions Non-financial corporations Households
	Holdings of debt securities	Identification of other financial institutions	Other financial institutions
		Identification of insurance corporations	Insurance corporations
	Holdings of equities	Identification of other financial institutions	Other financial institutions
		Identification of insurance corporations and pension funds	Insurance corporations Pension funds
	Financial derivatives	Identification of positions, if recorded within remaining assets/liabilities	-
	Accrued interest on loans/deposits	Identification of positions, if recorded within remaining assets/liabilities	-

Source: ECB Economic Bulletin, Issue 8/2015, p. 74.

Table A.3

New MFI statistics covered by Regulation ECB/2008/32 (June 2010 report)

Monthly items		Sector	Further breakdowns
MFI business with central counterparties (CCPs)	Within loans, reverse repurchase agreements with CCPs are identified separately	OFls	-
	Within deposits, more specifically repurchase agreements, those with CCPs are identified separately	OFls	By currency: euro/non-euro currencies
Revolving loans and overdrafts	Within the euro-denominated loans, revolving loans and overdrafts are identified separately	HHs NFCs	-
Credit card debt	Within the euro-denominated loans, credit card debt is identified separately	HHs NFCs	Convenience credit/extended credit
Lending to sole proprietors/unincorporated partnerships (SP/UP)	Within the "lending for purposes other than house purchase and credit for consumption", the loans to SP/UP are identified separately	HHs	By maturity: up to 1 year, over 1 year and up to 5 years, over 5 years
MFI business with financial vehicle corporations (FVCs)	Within the holdings of securities other than shares, those issued by FVCs are identified separately	OFls	-
	Within the deposits, those placed by FVCs are identified separately	OFls	By maturity: total maturity and up to 2 years
Transferable deposits	Within the overnight deposits those deposits are identified separately, which can be frequently used for payment transactions	By certain counterpart sectors and for some of these by currency (euro/total currency)	
Debt securities issued with capital guarantee of less than 100%	Within the debt securities issued, maturity up to two years, those with a nominal capital guarantee of less than 100% are identified separately	-	By currency: euro/non-euro currencies
Quarterly item			
Loans broken down by remaining maturity/interest rate reset	Within the euro-denominated loans, information on residual maturity and interest rate reset periods is newly collected	HHs NFCs	By original maturity (over 1 year/over 2 years), by residual maturity (up to 1 year/up to 2 years), by interest rate reset (next 12 months, next 24 months)

Source: ECB Monthly Bulletin August 2011, p.64

Notes: NFCs stands for "non-financial corporations"; HHs stands for "households"; OFIs stands for "other financial intermediaries".

Table A.4

Sector breakdowns for the euro area balance of payments position aggregates

BPM5		BPM6	
Monthly	Quarterly	Monthly	Quarterly
Eurosystem	Eurosystem	Eurosystem	Eurosystem
Other MFIs	Other MFIs	Other MFIs	Other MFIs
		Deposit-taking corporations excl. Eurosystem	Deposit-taking corporations excl. Eurosystem
		Money market funds	Money market funds
Non-MFIs	Non-MFIs		
	General government	General government	General government
	Other sectors	Other sectors	Other sectors
			Financial corporations
			Non-financial corporations, households and NPISHs

Source: ECB Monthly Bulletin August 2014, p. 91.

Note: "Other MFIs" refers to monetary financial institutions excluding central banks; "NPISHs" refers to non-profit institutions serving households.

Annex 3

Additional useful methodological tips for understanding the b.o.p. statistics

The b.o.p.³⁰ is a statistical statement that summarises the economic transactions between residents and non-residents over a specific period of time. Transactions are recorded whenever there is a change in “economic ownership”³¹.

The current and capital accounts record gross transactions. By contrast, the financial account records transactions in net terms. In other words, they reflect net changes arising from all credit and debit entries during the accounting period, separately for each financial asset and liability. The net acquisition of financial assets is calculated as the sum of all acquisitions minus sales (or redemptions) of assets, whereas the net incurrence of liabilities is calculated as the sum of all incurrences minus redemptions of liabilities. For net acquisitions of financial assets, a plus sign denotes a net increase in financial assets while a minus sign refers to a net decrease in financial assets, likewise for net incurrences of liabilities. Furthermore, the balance on transactions is calculated by subtracting net incurrences of liabilities from net acquisitions of financial assets.

Due to the double entry in the international accounts, “imputations” are sometimes necessary when a transaction has only one observed leg. For example, unilateral transfers such as migrant remittances, in addition to affecting the positions of domestic banks with foreign banks, have to be included in the current account. If this “imputation” is not done, the increase in assets in the financial account would not have a counterpart entry in the current account and therefore contribute to net errors and omissions. Figure A.1 shows the entries in an economy’s b.o.p. resulting from the receipt of migrant remittances.

³⁰ The statistical requirements of the ECB in the field of external statistics (b.o.p. and i.i.p.) are defined in Guideline ECB/2011/23 of 9 December 2011 (as amended), which is aimed at euro area NCBs, in accordance with Council Regulation (EC) No 2533/98 of 23 November 1998 (as amended). Recommendation ECB/2011/24 of 9 December 2011 (as amended) complements Guideline ECB/2011/23 by addressing other competent national authorities that are entrusted with the collection and/or compilation of external statistics in their respective countries.

³¹ A change in ownership from an economic point of view means that all risks, rewards, and rights and responsibilities of ownership are in practice transferred. In general, a change in “legal ownership” also involves a change in economic ownership. However, in some cases, a change of “economic ownership” takes place even though the “legal ownership” remains unchanged (e.g. financial leases and transactions between an enterprise and its foreign branches).

Figure A.1**Euro area balance of payments****B.o.p. entries recording migrant remittances**

(EUR millions)

Current account	Credits	Debits
Secondary income (current transfers): Other sectors	+100	
Financial account	Acquisition of assets	Incurrence of liabilities
Other investment (deposits): MFIs	+100	

Consistency between datasets

The statistical framework for the monetary presentation of the b.o.p. aims to distinguish between financial transactions of the MFI sector and transactions by non-MFIs in order to mirror the NEA in the MFI balance sheet. However, the implementation of this link has so far resulted in two major challenges from the above-mentioned theoretical framework, namely (i) limitations regarding the identification of certain MFI transactions vis-à-vis non-residents in BSI statistics, in particular for securities issued by MFIs and the (ii) consistency in practice for the availability of some instruments.

Table A.5 summarises per instrument the respective availability, coverage and potential comparability challenges between the two datasets.

Table A.5

Coverage and data compatibility of b.o.p. and BSI statistics

similar coverage			
partial coverage			
total missing			
not applicable			

B.o.p. by institutional sector				BSI net external assets				
Account	Subaccount/ Functional category	Financial instrument	Institutional sector		External assets	External liabilities		
Current account	Goods		All sectors					
	Services		All sectors					
	Income		All sectors					
Capital account			All sectors					
		Assets/liabilities						
Financial account	Direct investment	Equity	MFIs	Central Bank	Shares and other equity			
				Other DTC				
				MMF		MMF shares/units		
		General government						
		Other sectors						
		Debt instruments	MFIs	Central Bank	Other DTC	Securities other than shares / loans	Debt securities up to 2yr / deposits	
							MMF	
	General government							
	Other sectors							
	Portfolio investment	Equity and investment fund shares	MFIs	Central Bank	Other DTC	Shares and other equity		
							MMF	MMF shares/units
		General government						
		Other sectors						
		Debt securities - short term - long term	MFIs	Central Bank	Other DTC	Securities other than shares	Debt securities up to 2 yr	
							MMF	
General government								
Other sectors								
Financial derivatives and employee stock option	All sectors							
	MFIs*	Central Bank						
		Other DTC						
		MMF						
General government*								
Other sectors*								

B.o.p. by institutional sector				BSI net external assets		
Account	Subaccount/ Functional category	Financial instrument	Institutional sector		External assets	External liabilities
	Other investment	Currency and deposits, loans, SDRs allocations*	MFIs	Central Bank	Currency and loans	Currency / SDR allocation
				Other DTC		Deposits / loans
				MMF		
			General government			
			Other sectors			
			Trade credits and advances, other equity, insurance, pension schemes and standardised guarantee schemes, other account receivables and payables*	MFIs	Central Bank	
	Other DTC					
	MMF					
	General government					
	Other sectors					
Reserve assets	Monetary gold	MFIs	Central Bank	Gold and gold receivables		
	SDRs			Receivables from the IMF		
	Reserve positions in the IMF					
	Other reserve assets inc. financial derivatives					Loans/deposits/ securities
	Net errors and omissions					

(*) Breakdown only available on a quarterly basis.

Limitations regarding the identification of MFI transactions vis-à-vis non-residents

In BSI statistics, some MFI transactions vis-à-vis non-euro area residents are included under the other net assets (OA) counterpart instead of under the net external assets (NEA) counterpart. This is the case for items for which the geographical counterpart is not available, for example other accounts receivable and payable, or for those where the geographical counterpart has only become available quite recently and has some limitations, such as financial derivatives.

Transactions in “other investment” instruments other than currency, deposits and loans, such as other accounts payable and receivable, insurance, pension and standardised-guarantee-scheme technical reserves, are relevant for assets and liabilities, but they usually net out. These instruments are generally included under other net assets M3 counterpart instead of under net external assets in BSI statistics. The size of transactions missing geographical information was reduced after implementing ECB Regulation ECB/2013/33. The different approaches taken by the two datasets cannot be reconciled in the monetary presentation framework as these instruments are aggregated with deposits and loans on a monthly basis in the b.o.p.; therefore, they cannot be allocated to the non-MFI sector ($FA_{\text{Non-MFIs}}$). As shown in Chart 4 under “other investment instruments”, transactions in these instruments are a

source of discrepancies between the two sets of statistics in terms of the definition of net external assets; however, the discrepancy tends to be small in the net cumulative figures for four quarters.

The available data in b.o.p. statistics on transactions in financial derivatives by resident MFIs show that the figures are relatively small compared with the transactions of non-MFIs, as financial derivative transactions are driven by financial corporations other than MFIs. Therefore, the allocation of all transactions in financial derivatives to $FA_{\text{Non-MFIs}}$ in the monetary presentation of the b.o.p. does not considerably hamper the economic analysis and avoids inconsistencies in the implementation of the common definition of net external assets in both datasets. See Annex 3 for further details.

In the b.o.p., the net errors and omissions reflect the imbalances resulting from imperfections in source data and compilation practices. These may arise from financial or non-financial transactions, and they cannot be separated into MFI and non-MFI transactions. In order to develop the monetary presentation of the b.o.p., assuming the MFI sector is well covered, these net flows are included as mirror transactions of the MFIs, as shown in equation 4.

Special classification of transactions in financial derivatives

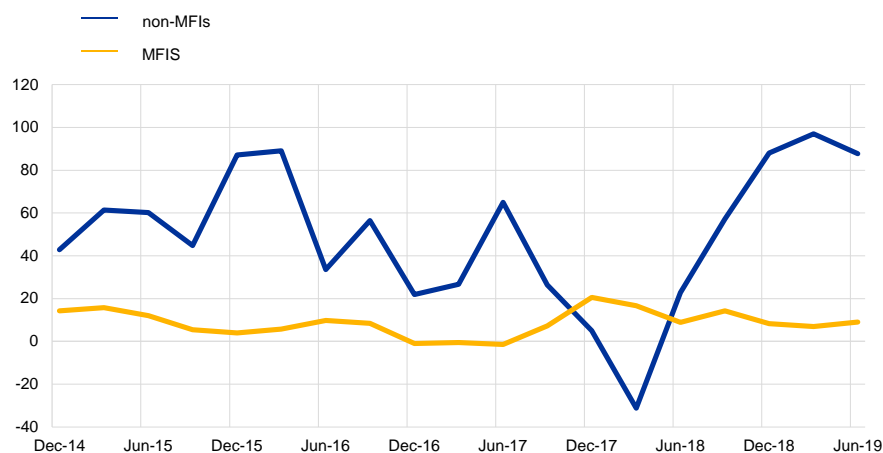
The information currently available in BSI statistics show large discrepancies with b.o.p. data, although the stocks are quite consistent with those reflected in the i.i.p. In general, it is considered that the quality of the transactions still has room for improvement in both sets of statistics. This is the case in particular for BSI statistics, where transactions are derived from stocks without an accurate estimation of price revaluations that would need more granular information, for example by type of financial derivative contract. Moreover, in b.o.p. statistics, the resident sector breakdown is only available on a quarterly basis.

Chart A.1 shows that the relevance of transactions in financial derivatives for MFIs is much lower than that for non-MFIs in the euro area b.o.p. Taking all the drawbacks into consideration, as well as the empirical lack of relevance of the MFI transactions, all the b.o.p. transactions in financial derivatives are allocated to the non-MFI sector in the monetary presentation of the b.o.p. To a certain extent, this avoids inconsistencies with the BSI statistics, which do not include financial derivatives under the net external assets of the MFIs, and therefore makes the theoretical identity between the net external assets and MFI transactions recorded in the b.o.p. closer in practical terms.

Chart A.1

Euro area balance of payments: financial derivatives (assets minus liabilities)

(EUR billions; four-quarter cumulated)



Source: ECB.

Different assumptions regarding the holdings of euro banknotes

In BSI statistics, all holdings of euro banknotes not held by euro area MFIs are included in M3 (and are therefore assumed to be held by the money-holding sector). The measurement of currency in circulation is a rather complex issue, particularly in monetary unions. Therefore, estimating the amount of currency in circulation outside the monetary union is very relevant but challenging.

Foreign holdings of euro banknotes have been estimated in the euro area b.o.p. statistics since 2002. In April 2016, the estimation method was updated to better capture the recent empirical evidence gathered by several studies and statistical domains. The current estimations in the b.o.p. and i.i.p. are based on cumulative banknote shipments of high denomination banknotes, total banknotes and coins in circulation, and an assumption of the ratio of coins to banknotes in domestic circulation.³²

While the overall aim of the estimation is to reach a meaningful result in the euro area i.i.p., the corresponding transactions in the euro area b.o.p. reflect the overall trend in the stocks and there is much uncertainty regarding the actual month-on-month developments.

³² For further details, please consult the [Estimating of euro currency in circulation outside the euro area](#).

Other consistency issues between the b.o.p. and the consolidated MFI balance sheet with regard to practical implementation

Based on Table A.3, most of the instruments have similar coverage and geographical availability in both sets of statistics. However, differences in compilation practices also give rise to differences between the transactions under net external assets in the two sets of statistics.

As regards compilation practices, the b.o.p. transaction data for the MFI sector are, in some countries, reported directly by MFIs, while monetary statistics derive transactions from differences in stock, adjusted for write-offs, reclassifications, exchange rate changes and price revaluations. Although the two approaches should, in principle, deliver very similar results, there may be differences in practice as the derivation of transactions from differences in stock relies on certain approximations, e.g. that foreign exchange transactions during the month can be converted into euro by using the average exchange rate during the month. While such an approximation may be valid in general, it may not hold when significant oscillations in exchange rates occur during the month and the transactions are concentrated on certain days.

Euro area b.o.p. and monetary statistics must be collected by different deadlines: b.o.p. data must be provided within 30 working days of the reference period, whereas monetary data must be reported within only 15 working days. This short time frame for the compilation of monetary data is one of the main reasons why the methodological framework for monetary statistics is largely based on balance sheet reporting, and therefore on business accounting rules, which in some cases deviate from statistical international standards. For example, securities transactions are reported according to the settlement date, which may be a few days after the actual contract date. The accounting framework also does not impute earnings not distributed within a group while the b.o.p. framework does in the context of foreign direct investment (FDI).

In general, the b.o.p. statistics, which are collected later, and for which homogeneous rules have to be applied across various sources, tend to conform more with the statistical standards, e.g. regarding the valuation of some transactions or the definition of certain instruments. In addition, the differences in timing may lead to temporal discrepancies due to different data vintages, which tend to disappear over time. In Chart 4, the discrepancies resulting from the practical implementation of the statistical standards also include the different treatment of euro banknotes holdings.

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