

# Cross-border banking transactions in the euro area<sup>1</sup>

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## Abstract

This paper describes key features of the framework relating to balance sheet statistics of Monetary Financial Institutions (MFIs) in the euro area, with a focus on cross-border transactions. We complement official documentation on the dataset (e.g. the ECB Manual on MFI balance sheet statistics) in order to clarify how data published by the ECB can be used to study financial intermediation in the union, and show, in particular, how to derive notional stock series that are consistent with transaction data. Starting from time series data on aggregated MFI transactions (including intra MFI positions), we identify cross-border activities, distinguishing between intra and extra euro area counterparts. For some items, we also describe time series dynamics at the country level to show how the available information can be used to best interpret aggregated developments. We complement this information with data on the Eurosystem consolidated financial statement and time series on MFI claims and liabilities on national central banks (NCBs) that the IMF published as part of the International Financial Statistics dataset, which allow us to give account of euro area MFI transactions with the Eurosystem.

Keywords: Bank balance sheets, non-standard monetary policy, central banks.

JEL classification: C82, E42, E58, F33, F42

## 1. Introduction

The objective of this paper is to describe a framework that allows analysing cross-border activities of Monetary Financial Institutions (MFI) in the euro area. In light of the importance of MFIs in the euro area financial system, they are key for studying financial intermediation in this economy<sup>4</sup>. Our main reference source is the MFI balance sheet statistics dataset compiled by the European Central Bank (ECB), which contains monthly information of the balance sheet of MFIs resident in the euro area, that is: the Eurosystem, credit institutions, money market funds and some other institutions that meet the MFI definition. In addition, we complement this information with data from the consolidated financial statement of the Eurosystem, in order to disentangle transactions between MFIs *other than central banks* and

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<sup>4</sup> At the end of 2011 MFIs accounted for about 61% of the total assets of the whole euro area financial sector and for about 63% of the total financing (loans and debt securities) received by the euro area non-financial private sector (households and non-financial corporations). These figures are to be compared with the corresponding US figures which reveal that depository institutions at the same date, accounted for about 27% of the total assets of the financial sector, and for about 22% of the total financing received by the non-financial private sector.

the Eurosystem at euro area level. For the same purpose, we also use at national level further information which is made available by the IMF as part of the International Financial Statistics dataset.

The MFI dataset is fully documented in the ECB Manual on MFI balance sheet statistics. The statistics are collected and compiled in a fully harmonised manner under Regulation ECB/2008/32 concerning the balance sheet of monetary financial institutions sector.<sup>5</sup> In this paper we explain the criteria used for data collection and the key characteristics of the dataset which should help users to understand advantages of these data with respect to alternative sources of information on banks' financial intermediation. Particular attention is paid to describe the statistical data that the ECB releases in this framework, both for the euro area as a whole and for individual euro area countries.

It is interesting to notice that MFI balance sheet statistics constitute an important basis for the compilation of the input to the BIS locational banking statistics dataset for euro area countries. Hence, the MFI balance sheet statistics contain similar but more detailed information, which is also released at higher frequency and in a timelier manner. In particular, currently available BIS data only focus on international claims, and do not include comparable information for domestic positions. This is an important limitation if the aim of a study is to encompass both cross-border activity *and* domestic developments.

An additional drawback with BIS data is that they are only available for outstanding amounts, and not for transactions. This may be a serious limitation when interpreting developments over time, given that developments of outstanding amounts may be affected by relevant breaks due to non-transaction effects (mainly revaluations and reclassifications). For this purpose, although we refer to data on outstanding amounts and transactions, we also provide some data elaboration to calculate notional measures of stocks, the *so called* notional stocks. Such measures use information on transactions in order to correct outstanding amounts for series breaks due to non-transaction effects and, hence, they are better suited for economic analysis than the outstanding amounts themselves.

In this paper we will focus on the aggregated balance sheet of the euro area MFI sector, to be distinguished from the consolidated balance sheet which nets-out the inter-MFI positions. Section two describes the general framework for the collection and the compilation of the MFI balance sheet statistics. It focuses on the release of national MFI balance sheet data by the ECB and, then briefly describes how the latter can be complemented with other data sources. Section three highlights some stylised facts on the developments of MFI balance sheets. First, a distinction is drawn among (i) domestic, (ii) intra euro area cross border and (iii) extra euro area cross-border positions and transactions. For what concerns the domestic positions, those with the Eurosystem are also analysed. Moreover, in order to highlight heterogeneity across countries, some information on national balance sheet data is reported. Section four concludes.

## **2. MFI balance sheet statistics**

### **2.1 The collection framework**

MFIs comprise central banks, credit institutions and money market funds (MMFs)<sup>6</sup>. Credit institutions are defined in European legislation as undertakings whose business is to receive

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<sup>5</sup> Regulation (EC) No 25/2009 of the ECB of 19 December 2008 concerning the balance sheet of the monetary financial institutions sector (Recast), OJ L 15, 20.1.2009, p. 14.

<sup>6</sup> The EU list of MFIs provides an exhaustive and up-to-date enumeration of MFIs located in EU countries (see <http://www.ecb.europa.eu>).

deposits or other repayable funds from the public and to grant credits for their own account.<sup>7</sup> These institutions are subject to hold minimum reserves with national central banks within the framework of the Eurosystem's minimum reserve system and, subject to the fulfilment of eligibility criteria, they represent eligible counterparties for the Eurosystem's monetary policy operations.<sup>8</sup> MMFs instead are a type of collective investment undertakings which invest in very liquid assets and whose shares/units can thus be seen as substitutes of bank deposits.<sup>9</sup>

This statistical framework addresses balance sheet data. No supervisory, profit and loss or other types of financial statistics are made available in this context. Similarly, no information on off-balance sheet items is covered. Statistical reports are allocated according to the residency of the institution ('host country' residency approach) and are based on solo accounts reporting (thus unconsolidated<sup>10</sup>). Hence, the focus is not on banks themselves (e.g. supervisory purposes), but rather on their impact on the economies of the territories where they are resident. Euro area branches and subsidiaries of non-euro area banking groups are considered as resident MFIs and are thus covered by the reporting framework in the country where they are registered. Non-euro area branches and subsidiaries of euro banking groups, however, fall out of the scope of the reporting.

The concepts underlying the statistical requirements for MFI balance sheet statistics are based on international statistical standards, namely the System of National Accounts (of which the SNA 2008 is the latest version) and the European System of National and Regional Accounts 1995 (ESA 95).<sup>11</sup> Adherence to these standards guarantees the international comparability of the statistics and ensures a sound methodological background. MFI balance sheet statistics are thus also broadly consistent with the financial and non-financial accounts (i.e. flow of funds) which are also based on these standards. At euro area level, in particular, MFI balance sheet statistics represent the major input for the compilation of the quarterly integrated euro area accounts with reference to the MFI sector. The same often applies at national level, where statistical compilers directly draw on MFI statistical returns to construct the financial accounts for the MFI sector.

These harmonised MFI statistics have been regularly collected by euro area NCBs since 1999. In particular, the collection framework for MFI balance sheet statistics was first laid down in Regulation ECB/1998/16. Since then, substantial amendments have taken place in 2001 (ECB/2001/13) and 2008 (ECB/2008/32), entailing additional coverage from 2003 (e.g. for sector breakdowns) and from 2010 (e.g. for securitisation)<sup>12</sup>. The reporting scheme covers asset and liability positions of the MFI balance sheet broken down by instrument categories, with additional information by sector and residency area of the counterpart and original maturity. Data are collected for amounts outstanding at the end of the period, but additional statistics are also covered to allow the derivation of statistics on financial

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<sup>7</sup> See Article 4(1) of the European Parliament and Council Directive 2006/48/EC.

<sup>8</sup> Under certain conditions, institutions can be exempted from their obligations under the Eurosystem's minimum reserve system but would then not be eligible for monetary policy operations. For more insights on these aspects, see "The implementation of monetary policy in the euro area."

<sup>9</sup> A handful of other institutions are also included in the MFI sector. Those include certain financial institutions whose business is to receive deposits and/or close substitutes of deposits from entities other than MFIs and, for their own account, to grant credits and/or invest in securities. For example, institutions that are principally engaged in financial intermediation in the form of issuing electronic money are part of this group.

<sup>10</sup> In particular, the Regulation (Annex II, Part 1) requires MFIs to consolidate the business of all their offices (registered or head office and branches) located within the same national territory. Furthermore if an MFI has subsidiaries (as opposed to branches) in the same country which are also MFIs, the parent MFI may (but is not required to) consolidate in its statistical returns the business of these subsidiaries. But the Regulation permits no consolidation across national boundaries.

<sup>11</sup> The ESA 95 is broadly consistent with the SNA 1993 (the previous version of the SNA) and is currently being revised in line with the SNA 2008.

<sup>12</sup> For a more detailed discussion of the reporting and methodological framework of MFI balance sheet statistics, see also the "Manual on MFI balance sheet statistics."

transactions – see next section. In particular, on the assets side the reporting scheme covers information on **cash, loans**<sup>13</sup>, holdings of **MMF shares/units, securities other than shares and shares and other equity, fixed assets, and remaining assets**. On the liabilities side, data are collected for **currency in circulation** (NCB only), **deposits**<sup>14</sup>, **MMF shares/unit** (MMFs only), **debt securities issued, capital and reserves, and remaining liabilities**. Breakdowns by sector and residency of the counterpart are collected for asset claims related to loans and holdings of securities (securities other than shares and shares and other equity), and for deposit liabilities.<sup>15</sup> The geographical split is required between domestic, other euro area and rest of the world positions.<sup>16</sup> For positions with domestic residents and residents of other euro area countries, the sectoral breakdown consists of a split between MFIs, and non-MFIs. The latter is further expanded into general government, and other residents. In addition, for loan claims and deposit liabilities, other residents are further decomposed in insurance corporations and pension funds, other financial intermediaries (excluding insurance corporations and pension funds), non-financial corporations and households. The detailed split of “other residents” into its sub-components for holdings of securities (securities other than shares and shares and other equity) is collected quarterly. Additional details are covered for MFI loans to households, namely a breakdown by purpose of the loan (consumption, house purchase, other). For positions with non-euro area residents, data are collected on a quarterly basis broken down by banks<sup>17</sup>, general government and other resident sectors.

Breakdowns are also collected according to the original maturity of the instrument for loans to other residents and holdings of debt securities (assets), and for deposits and debt securities issued by MFIs (liabilities)<sup>18</sup>. For certain instrument categories maturity breakdowns are only reported at quarterly frequency. A split by currency of denomination of the instruments is also collected (in most cases) at monthly frequency between euro and non-euro denominated positions. Additional breakdowns by individual currency of denomination are reported at quarterly frequency.

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<sup>13</sup> Deposits claims by MFIs are indistinguishably included under ‘loans’.

<sup>14</sup> Loan liabilities of MFIs are indistinguishably included under ‘deposits’. Deposit liabilities vis-à-vis non-MFIs (excluding the central government) are also broken down by type (overnight deposits, deposits with agreed maturity, deposits redeemable at notice and repurchase agreements).

<sup>15</sup> The splits are not collected for securities (securities other than shares and shares and other equity) issued by MFIs and MMF shares/units as the holders of the assets are most often unknown to the issuers of the instruments. For securities in M3 (MMF shares/units and debt securities with an original maturity of up to two years), however, the geographical split is estimated at aggregated level by NCBs (or, in some cases, by the ECB) to allow a more correct derivation of M3.

<sup>16</sup> Additional breakdowns by country of the counterparties are collected at quarterly frequency.

<sup>17</sup> The EU list of MFIs provides a clear reference to define the boundaries of the MFI sector in EU countries, but no fully equivalent definition is applied elsewhere. Hence, for the rest of the world the definition can only be functional. According to the ‘Monetary financial institutions and markets statistics Sector manual’, the rest of the world category ‘banks’ comprises MFIs located in EU Member States outside the euro area, and *banks* located outside the EU, including branches and subsidiaries of MFIs located in the euro area. The latter also includes NCBs and international organisations that undertake banking activities as central monetary authorities (e.g. the BIS and the IMF). The treatment of MMFs residents outside the EU is not clear and may vary according to the guidance provided by the relevant NCBs, but they are likely to be excluded from the category.

<sup>18</sup> Loans to non-MFIs are available with a maturity split of “up to one year”, “over one year and up to five years”, “over five years”. Deposits with agreed maturity as well as holdings and issuance of debt securities are available with a maturity breakdown of “up to one year”, “over one and up to two years” and “over two years”. Finally, deposits redeemable at notice are broken down between “up to three months” and “over three months”. Information on original maturity of monetary liabilities is key to the derivation of M2 and M3.

## 2.2 The compilation process

According to Regulation ECB/2008/32, the reporting population for MFI balance sheet statistics in each euro area country consists of the MFIs resident in the national territory. Data are reported to the relevant NCB, which aggregates the reported information at national level. The statistics are then transmitted to the ECB, which aggregates the national statistical returns to obtain the aggregated balance sheet for the euro area MFI sector as a whole.

Statistics are compiled for amounts outstanding at the end of the period, and (more importantly) for financial transactions. It is transactions that are used to measure the flow of financing between MFIs and other sectors and the rest of the world, and it is from transactions that growth rates are calculated. In line with international statistical standards, transactions are calculated at the ECB by taking, for each asset and liability item, the difference between stock positions at end-period reporting dates, and then removing the effect of developments that are not the result of transactions. These other factors comprise valuation effects arising from changes in prices or in exchange rates, and what the ESA 95 calls other changes in the volume of assets, including loan write-offs/write-downs and reclassifications and other adjustments (e.g. changes in the composition and structure of the MFI sector, changes in the classification of counterparties and of assets and liabilities, correction of reporting errors, changes in definition).<sup>19</sup>

The aggregated balance sheet of the euro area MFI sector constitutes the basis for the derivation of the consolidated balance sheet (netting the inter-MFI positions within the euro area), and of monetary aggregates and counterparts.<sup>20</sup> The aspects, however, fall outside the scope of this paper, as the discussion aims at describing the framework to analyse banking flows, and are thus not reviewed in more detail.

## 2.3 Publication of national data

Based on the data collected, the ECB and euro area NCBs publish a wide range of MFI balance sheet statistics. While the ECB mainly focuses on disseminating data for the euro area as a whole supplemented by national contributions to the euro area aggregates, the publication of additional statistics for the individual countries is left at national level. The ECB, however, in agreement with euro area NCBs, also publishes a comprehensive (though

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<sup>19</sup> NCBs compile data on reclassifications and other adjustments based on various sources they have available and transmit the information to the ECB. Statistics on loan write-offs/write-downs are collected by NCBs from MFIs in accordance with the minimum requirements set out in Regulation ECB/2008/32, and transmitted on an aggregated basis to the ECB. Revaluations, in turn, are of two types. MFIs are not subject to report information of revaluations for changes in exchange rates. Rather, the adjustments are estimated directly by the ECB on an aggregated basis. Similar procedures, however, are in place in NCBs to allow the derivation of transactions at national level (whenever more accurate estimates are available at NCBs, they may transmit the adjustments to the ECB directly). As regards revaluations due to changes in prices, NCBs report them to the ECB on an aggregated basis. In most cases, this input is based on revaluations data directly reported by MFIs. In some cases, however, NCBs directly collect data on financial transactions, and price revaluations are then obtained as a residual. For more details on the derivation of transactions, see the "Manual on MFI balance sheet statistics."

<sup>20</sup> The consolidated balance sheet of the euro area MFI sector provides statistical information on the MFI sector's assets and liabilities vis-à-vis residents of the euro area outside the MFI sector (i.e. general government, non-financial corporations, households, insurance corporations and pension funds and other financial intermediaries) and vis-à-vis non-residents of the euro area. The netting of inter-MFI positions is not confined to deposits and loans, but covers all balance sheet items where counterparty information allows the amount of the MFI liability held within the MFI sector to be determined. The final step leading to the derivation of monetary aggregates and counterparts consists of deducting from MFI monetary liabilities type the non-euro residents' holdings of short-term securities (including MMF shares/units) issued by euro area MFIs, and adding those deposit liabilities of the central government and certain post offices that have a monetary character.

limited) set of national statistics for individual countries. As the focus of the paper is on national developments, the section reviews the availability of country data in more detail.<sup>21</sup>

**Table 1: ECB publication of aggregated balance sheet statistics for MFIs excluding the Eurosystem for euro area countries**

Assets		Liabilities	
<b>Positions vis-à-vis euro area residents</b>			
<b>1. Currency (euro)<sup>1</sup></b>			
<b>2. Loans</b>		<b>9. Deposits</b>	
MFIs		MFIs	
o/w Eurosystem <sup>2</sup>		o/w Eurosystem <sup>2</sup>	
Government		Government	
Private sector		Private sector	
<b>3. MMF shares/units</b>		<b>10. MMF shares/units</b>	
<b>4. Securities other than shares</b>		<b>11. Debt securities issued<sup>3</sup></b>	
MFIs			
Government			
Private sector			
<b>5. Shares and other equity</b>		<b>12. Capital and reserves<sup>3</sup></b>	
MFIs			
Private sector			
<b>Positions vis-à-vis extra-euro area residents</b>			
<b>6. External assets</b>		<b>13. External liabilities</b>	
<b>Other counterparts - Residency non specified</b>			
<b>7. Fixed assets</b>		<b>14. Remaining liabilities</b>	
<b>8. Remaining assets<sup>1</sup></b>			
<b>Total</b>			
<b>Total assets</b>		<b>Total liabilities</b>	

1) Holdings of euro currency are included indistinguishably in remaining assets.

2) Data on loans and deposit MFI claims and liabilities on the Eurosystem are not published by the ECB but by the IMF as part of the International Financial Statistics dataset (<http://www.imf.org/external/data.htm>).

3) As clarified above, for debt securities issued and capital and reserves, MFIs do not report breakdowns by residency of the counterpart. NCBs and, in some cases, the ECB, however, estimate for securities other than shares with an original maturity of up to two years the holdings by non-euro area residents to allow a more accurate estimation of M3. No such estimates are performed at current stage for securities other than shares with an original maturity above two years, and for capital and reserves. In this case, the working assumption is that they are fully held by euro area residents.

Notes: Data relate to MFIs excluding the Eurosystem (i.e. the NCB). All time series (with the exception of the items relating to positions with the Eurosystem) are made available on the ECB Statistical Data Warehouse (<http://sdw.ecb.europa.eu>) and on the ECB website ([http://www.ecb.europa.eu/stats/money/aggregates/b Sheets/html/outstanding\\_amounts\\_index.en.html](http://www.ecb.europa.eu/stats/money/aggregates/b Sheets/html/outstanding_amounts_index.en.html)).

The first set of published data relates to the aggregated national balance sheets of MFIs excluding the Eurosystem, which thus mainly relates to credit institutions and MMFs. Table 1 reviews the data availability in detail. The time series are published at a monthly frequency and, in most cases, cover periods as from September 1997. Asset and liabilities positions are made available disentangling positions with euro area residents from positions with residents of the rest of the world. Hence, the publication does not take the national perspective here, but rather provides a decomposition of the aggregated balance sheet of the euro area MFI sector (excluding the Eurosystem) into the underlying national contributions. No data on MFI holdings of euro currency (1) are made available; these positions are included in remaining assets (8). In addition to the items listed in the table, other information is also published by the ECB. In particular, for loans (2) additional sectoral breakdowns are made available, splitting the private sector into its underlying sub-sectors (i.e. households, non-financial

<sup>21</sup> The publication also covers other additional concepts (among those, detailed breakdowns by currency of denomination of the instruments), but those are not reviewed here as they have secondary importance on the context of banking flows' analysis.

corporations, insurance corporations and pension funds, and other financial intermediaries), and, for loans to households, by purpose of the loan (i.e. consumer credit, house purchase, other). For holdings of securities other than shares (4) issued by MFIs, data are also broken down according to the original maturity of the instrument. In the case of deposits (9), detailed breakdowns by type of instrument, maturity and sector of the counterparty are published for those entering into M3. Debt securities issued (11) are further broken down by original maturity. An important remark relates to the geographical split of debt securities issued and capital and reserves. It is important to stress that only for debt securities in M3 (issued with an original maturity of up to two years) estimates are made between holdings of euro area residents and non-euro area resident holdings. Debt securities issued with an original maturity above two years and capital and reserves are fully allocated to euro area holdings.

An additional important remark relates to the external assets and liabilities positions (6 and 13). While external assets offer a reliable picture of the asset positions on non-euro area residents (mainly loans to non-euro area residents and holdings of securities issued outside the euro area), external liabilities (consisting of deposits vis-à-vis non-euro residents and estimated holdings by non-residents of debt securities in M3) likely underestimate the foreign positions. Loans claims and deposit liabilities vis-à-vis euro area MFIs also include MFI positions with the Eurosystem. While the ECB's MFI balance sheet statistics framework does not provide this information, the separate identification of these positions is of interest in light of the higher relevance of central bank operations since the intensification of the financial crisis. At euro area level, the consolidated financial statement of the Eurosystem provides weekly data on the outstanding amounts of Eurosystem's claims and liabilities vis-à-vis euro area credit institutions.<sup>22</sup> For individual euro area countries, statistics on MFI positions against the NCB are made available by the IMF in the context of the International Financial Statistics dataset and are included in the reference conceptual framework of this paper (yellow cells in Table 1).

**Table 2: ECB publication of cross-border data for MFIs excluding the Eurosystem for euro area countries**

	Domestic	Other euro area	Extra-euro area
<b>Assets</b>			
<b>2. Loans</b>			
MFI / banks			
non-MFI / non-banks			
<b>3. MMF shares/units</b>			
MFI / banks			
<b>4. Securities other than shares</b>			
MFI / banks			
non-MFI / non-banks			
<b>5. Shares and other equity</b>			
<b>Liabilities</b>			
<b>9. Deposits</b>			
MFI / banks			
non-MFI / non-banks			

Notes: Data relate to MFIs excluding the Eurosystem (i.e. the NCB). All time series corresponding to the item relating to the red cells are made available on the ECB Statistical Data Warehouse (<http://sdw.ecb.europa.eu>).

Turning to cross-border positions (and flows), the ECB releases for the main asset and liability items of the national aggregated balance sheet detailed breakdowns by residency of

<sup>22</sup> See <http://www.ecb.int/press/pr/wfs/2012/html/index.en.html>.

the counterpart, distinguishing between domestic residents, resident of other euro area countries and non-euro area residents, as described in Table 2. The time series are published at a quarterly frequency and, in most cases, cover periods as from September 1997. Additional breakdowns are in principle available by individual counterpart country (outstanding amounts only), but not all time series are released due to confidentiality considerations.

The operational framework of the Eurosystem provides that operations with MFIs are always conducted via the relevant NCBs. It thus follows that the IMF series shown in Table 1 effectively relate to domestic positions, as MFIs claims and liabilities vis-à-vis the Eurosystem have the domestic NCB as direct counterpart. Information from Tables 1 and 2 can thus be merged to split loans and deposits vis-à-vis domestic MFIs between positions with the NCB (i.e. the Eurosystem) and other domestic MFIs.

Data on (balance sheet) outstanding amounts are often used by researchers to draw analyses. In particular, the difference between stock positions at two consecutive ends-of-period are often used as a proxy to measure flows within the period. This approach fails to take into consideration the effect of developments (revaluations and other changes in the volume of assets, as discussed above) that are *not* the outcome of transactions and insert breaks in the stock series. Hence, transactions data should be directly used to measure economic flows (and to calculate growth rates). This paper makes benefit of these ideas and uses notional measures of stocks ('notional stocks') instead of outstanding amounts. Those are constructed by cumulating transactions and using Q4 2011 stocks as base value.

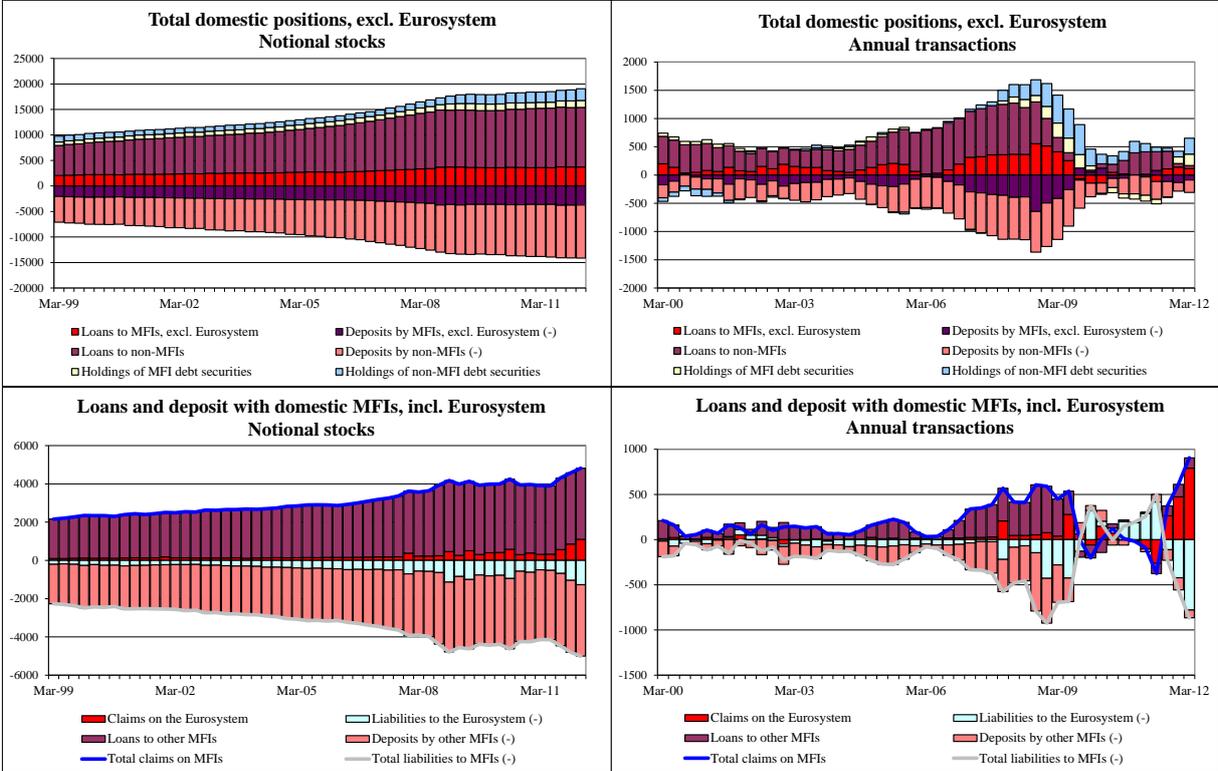
### **3. Cross-border activities of MFIs (excluding the Eurosystem)**

In order to study cross-border banking activities, we focus on the main items of the MFI balance sheet. For the asset side, we consider loans and holdings of securities other than shares, while on the liability side we limit the analysis to deposits. For the period between January 1999 and March 2012, these items covered, on average, about 87% of MFI assets and 65% of MFI liabilities. It is also worth recalling here that the allocation of the instruments by area of residency of the counterpart (domestic, other euro area, extra-euro area) is not available for all balance sheet instruments (notably for debt securities issued by MFIs with a maturity over two years, and for capital and reserves). The selected instruments cover, on average over the period from January 1999 to March 2012, over 90% of assets and liabilities for which the allocation by area of residency of the counterpart is available. For the three instruments, we consider the MFI balance sheet amounts outstanding (notional stocks) at euro area level and the corresponding transactions, and distinguish between MFI activities with domestic and non-domestic residents.

Figure 1 concentrates on MFI domestic positions. The top panels show series developments excluding positions with the Eurosystem. Starting from 1999, balance sheet domestic positions steadily increased over time, accelerating in periods preceding the inception of the financial crisis. Domestic positions kept increasing, although at a slower pace, between Q3 2007 and Q3 2008, to then come to a sudden stop with the Lehman's episode, mainly driven by developments on the domestic interbank market and, to some extent, loans to non-MFIs. In the course of 2010, transactions on loans and deposits with non-MFIs started to grow again and remained in positive territory till recent quarters, while the domestic interbank market (excluding the Eurosystem) remained stable, without further signs of contraction. The lower panels include positions with the Eurosystem, showing the increasing importance of Eurosystem on the interbank market since the start of the financial crisis in 2007 (as recalled above operations with the Eurosystem are always allocated domestically). Three phases can be identified. First, after the failure of Lehman, a lot of liquidity was injected on the market. This was an answer to dynamics on the interbank market, but it is worth stressing that cross-border rather than domestic positions were mostly concerned at this juncture, as it will be

shown next. A period of 'normalisation' thus followed, until around fall 2011, when new tensions led to the launch of the Eurosystem's long-term refinancing operations. An interesting observation relates to the developments in transactions, i.e. that the Eurosystem accounted for most of the transactions relating to domestic inter-MFI loans and deposits since Lehman's default.

**Figure 1: Domestic positions of MFIs excluding the Eurosystem, with separate identification of activities with the Eurosystem, EUR billions**



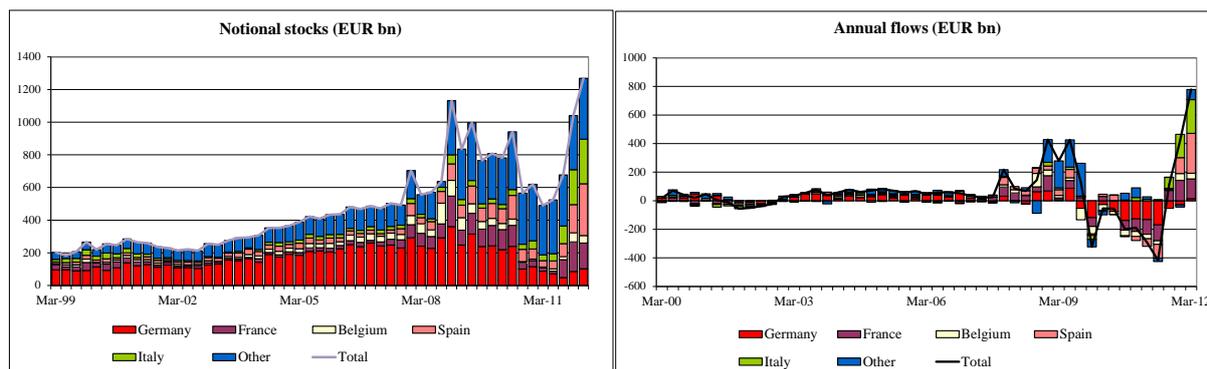
Source: ECB (MFI balance sheet statistics and consolidated financial statement of the Eurosystem).

Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period.

IMF data can also be used to investigate country developments as regards claims of the Eurosystem on credit institutions (e.g. access to refinancing operations)<sup>23</sup>. Figure 2 show that German banks have traditionally accounted for large part of loan claims of the Eurosystem on euro area banks. The picture changed as from end-2009, where German MFIs reduced their liabilities on the Eurosystem to a large extent. Developments in other countries follow less clear dynamics. French and Spanish MFIs, for instance, also reduced their liabilities to the Eurosystem's from end-2009, but then increased again these positions in the second half of 2011 (and especially as from Q4 2011, thus suggesting a high recourse to the long-term refinancing operations). Italian MFIs, instead, follow a different pattern: while their liabilities to the Eurosystem have always remained at low level, those rapidly increased as from Q3 2011, probably in relation (from Q4 2011 onwards) to a high recourse to the long-term refinancing operations also in this case.

<sup>23</sup> A similar decomposition could also be performed for Eurosystem's liabilities to credit institutions (e.g. use of the deposit facility).

**Figure 2: Decomposition of Eurosystem loan claims on euro area credit institutions by country, EUR billions**

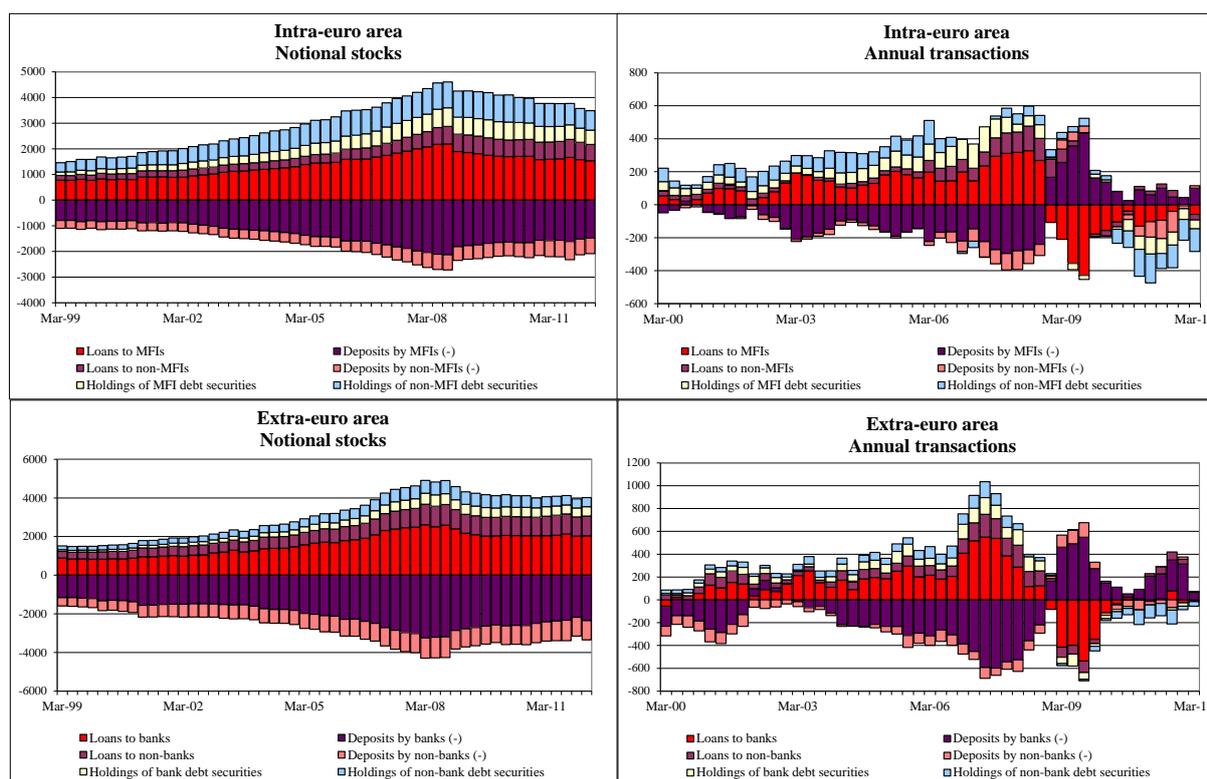


Source: ECB (consolidated financial statement of the Eurosystem) and IMF (International Financial Statistics).

Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period.

Turning to MFI cross-border positions, Figure 3 provides a split of MFI positions with non-domestic residents between intra-euro area activities and operations with non-euro area residents. A first observation (well documented by the economic literature) relates to the increases in cross-border interbank activities since 1999, especially at euro area level. These dynamics are often used as a proof of the increasing financial integration within the euro area since its inception.

**Figure 3: Cross-border positions of MFIs excluding the Eurosystem, EUR billions**



Source: ECB (MFI balance sheet statistics).

Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period.

While dynamics in intra and extra-euro area interbank activities followed similar patterns in historical terms, they were affected differently by the inception of the financial crisis in mid-2007, with extra-euro area cross-border transactions showing early sign of deceleration, while intra-euro area developments kept increasing till Lehman's default. This episode determined, however, a firm contraction on the cross-border interbank markets, with

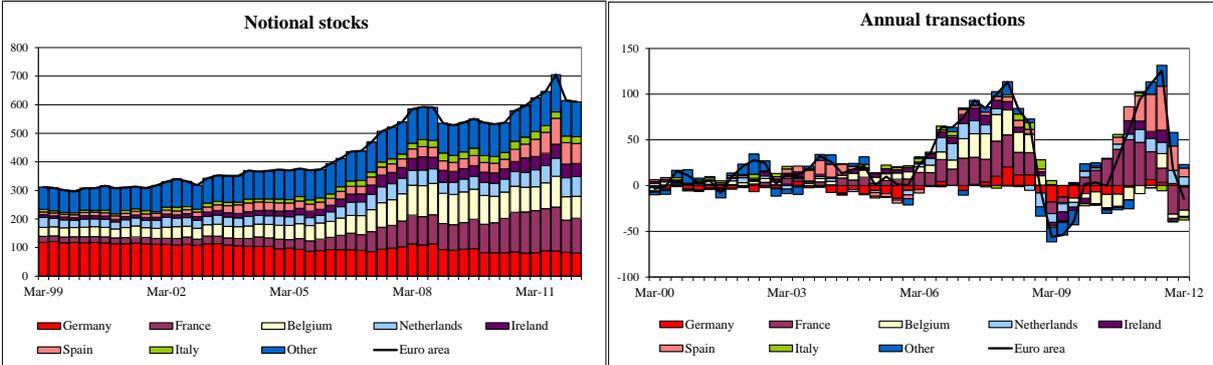
transactions turning sensibly negative both within the euro area, and with non-euro area residents. Figure 3 is in line with recent economic literature (for instance, see Giannone et al., 2012), which has widely documented that interbank activities after the collapse of Lehman were characterised by an unusual decline of transactions with non-euro area residents, and shows that similar dynamics have also characterised intra-euro area cross-border flows. After several quarters of intense contraction, flows have then reduced over time, while remaining in negative territory.

While cross-border activities with non-euro area residents are mainly characterised by interbank loan/deposit developments, intra-euro area cross-border activities are (to a certain extent) also affected by other factors. Those mainly relate to deposits by non-MFIs and holdings of debt securities. Developments in these categories are often covered by the specialised press, but we would feel that they rarely exploit in full the richness of the available data. In this respect, we now show how aggregated developments can be decomposed to study the patterns at country level, and also highlight the drawbacks of some of the popular accounts.

### 3.1 Intra-euro area cross-border activities relating to deposits with non-MFIs

Financial press often makes reference to large flows from the euro area “periphery” (e.g. Greece) to the “centre” (e.g. Germany) affecting non-MFI deposits. In fact, the euro area aggregated data shown in Figure 3 would seem to confirm this story: starting from Q1 1999, the total intra-euro area cross-border positions were smoothly increasing till end-2005, and then accelerated until Lehman’s default; after suffering a sharp decline, they moved back to a positive-growth territory as from the beginning of 2010, to start decreasing again as from Q3 2011. Looking at the underlying country contributions, however, helps better interpreting the dynamics and, at least to a certain extent, to confirm or invalidate stories that are often built on the aggregated developments.

**Figure 4: Deposits by non-MFIs – Decomposition of intra-euro area cross-border positions of MFIs excluding the Eurosystem by country, EUR billions**



Source: ECB (MFI balance sheet statistics).

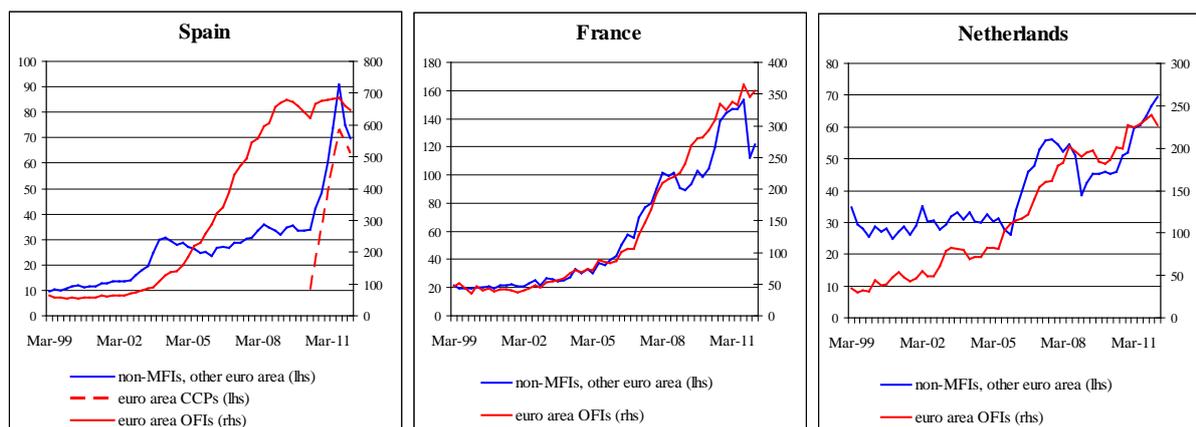
Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period.

Importantly, Figure 4 shows that while German MFIs accounted for about a third of the euro area total cross-border positions relating to deposits by non-MFIs in 1999, their importance decreased over time, and after the Lehman’s episode transactions actually turned negative. The cross-border large positive transactions before Lehman’s default are actually mainly due to France and Belgium while, as from early 2010, France, Spain and (to a smaller extent) the Netherlands account for most of the aggregated development. Unfortunately, no data are available that would allow identifying which sectors within ‘non-MFIs’ are behind these developments. In fact, such national sectoral breakdowns are released by the ECB only for positions with euro area residents as a whole, but without the separate identification of intra-euro area cross-border activities (as recalled above). However, some stories fitting with the

facts just described can be told by comparing the developments of *MFI deposits with non-MFIs resident in other euro area countries* for France, Spain and the Netherlands with data on *MFI deposits with other financial intermediaries resident in the whole euro area*.

Figure 5 shows that the developments in cross-border deposits by non-MFIs match rather closely those in the corresponding series on deposits placed by euro area other financial intermediaries in all cases, hinting at the fact that this sector is likely to drive the developments for non-MFIs.

**Figure 5: Cross-border deposits placed by non-MFIs with MFIs excluding the Eurosystem and developments of the OFI sector, Notional stocks, EUR billions**



Source: ECB (MFI balance sheet statistics).

Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period. 'OFIs' and 'CCPs' stand for 'other financial intermediaries' and 'central counterparties' respectively. Data for central counterparties are only available as from June 2010 and relate to tri-party repurchase agreements only.

In particular, in the case of Spain, repurchase agreements with central counterparties seem to play a major role. These instruments (often called tri-party repos) represent an attractive way for financial intermediaries to access the secured (interbank) lending market, as they have the advantage of reducing counterparty risk for the lender compared to a normal bilateral repo operation.<sup>24</sup>

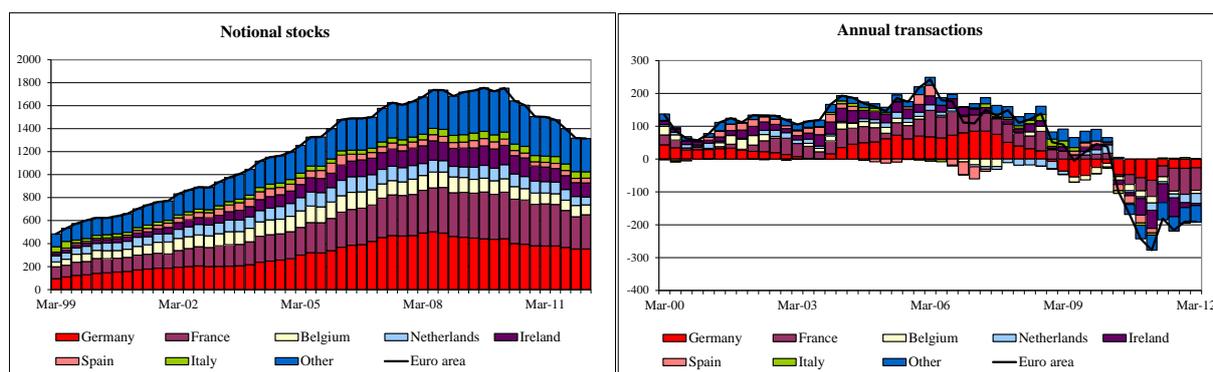
### 3.2 Intra-euro area cross-border activities relating to holdings of debt securities

Data on intra-euro area cross-border MFI holdings of debt securities are very often utilised by the financial press to study the linkages between euro area bond markets. The ECB also uses these statistics to construct financial integration indicators for the euro area bond market<sup>25</sup>. Starting from Q1 1999, the total intra-euro area cross-border positions were smoothly increasing until mid-2009, when they reached their peak. Since then, transactions started to turn negative. These large negative transactions, jointly with data on holdings of domestic securities (see Figure 1), show that the de-leveraging of euro area MFIs on their security portfolios was mainly connected to their intra-euro area cross-border holdings.

<sup>24</sup> Tri-party repos are structured as follows: i) the cash borrower enters into a repurchase agreement with the third party, borrowing the required amount and providing collateral to the third party as required; ii) the cash lender enters into a reverse repurchase agreement with the third party; iii) the third party administers the transaction and the collateral, acting as the direct counterparty to the seller and the buyer, thus assuming the risk of default of the borrower. In addition, the collateral management is highly standardised in terms of profiling and margining with the consequence of improving the transparency of the product, and the administrative burden for the counterparties is significantly reduced compared to a bilateral repo.

<sup>25</sup> See, for instance, Chart S12 of the 2012 edition of the ECB report "Financial Integration in Europe."

**Figure 6: Holdings of debt securities – Decomposition of intra-euro area cross-border positions of MFIs excluding the Eurosystem by country, EUR billions**



Source: ECB (MFI balance sheet statistics).

Notes: Notional stocks are obtained by cumulating quarterly transactions and using Q4 2011 as base period.

Figure 6 allows to examine the underlying national contributions and to highlight the different behaviours that have emerged across countries, which is hardly analysed in detail by the financial press. Until mid-2008, the steep increases in cross-border holdings were mainly led by German and French MFIs. MFIs resident in Germany, however, were the first to start reducing their exposure on these assets after Lehman’s default. MFIs resident in other euro area countries started to reduce their cross-border holdings of debt securities only later, as from Q2 2009. Once again, besides German MFIs, French MFIs were upfront leading the development, together with Irish MFIs (for certain periods) and Dutch MFIs (to a lower extent).

A natural question to investigate would be whether the de-leveraging affected all issuing sectors, or rather certain issuers. Detailed data are only available for securities issued by MFIs and non-MFIs. These statistics show that, indeed, both sectors were affected in similar terms (see also Figure 1). Although no split is available, for instance, between government and (non-bank) corporates, indicators published in the 2012 edition of the ECB report “Financial integration in Europe” show that both sub-sectors were equally affected.

## 4. Conclusions

This paper describes key features of MFI balance sheet statistics and reviews in some detail the data which are published by the ECB. While the dataset is accompanied by large pieces of official documentation that explain it in detail, what is missing is a quick (but comprehensive) reference guide for interested non-statistical users.

Particular attention is paid to explaining the importance of using transactions data and notional measures of stocks, as opposed to stocks themselves, in order to correct breaks in stocks due to revaluations and reclassifications that have limited importance for economic analysis.

The richness of the dataset is then used to describe developments in MFI balance sheets, with a special focus on cross-border activities. Our main message is that users often do not use the available data in full, and sometimes the connections with other existing datasets are not fully exploited. For instance, we show how national data can be matched with existing euro area aggregates to decompose aggregated dynamics into the underlying country contributions. We also give account of one case where aggregated developments may fit with a story whose fallacy could be easily identified, should an appropriate study of the underlying available data be performed.

This paper aims to provide a synthetic description of recent developments in the balance sheet of euro area MFIs. The next step in our research agenda is to use this wealth of information in order to investigate in much detail cross-country differences, their determinants and their likely evolutions.

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