

# Reconciling MFI balance sheet data with supervisory data: are statistical revaluations data relevant to gauge information on banks' gain/losses?<sup>1</sup>

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**Abstract:** The important role played by trading and banking books for the profit and loss accounts of many banks has intensified the need for monitoring, stress testing and possibly also forecasting the valuations of banks' securities holdings for supporting financial stability analyses. An important impediment to this work is the limited availability of data from public sources which consist mainly of quarterly or annual observations from banks' published financial reports. This paper focuses on the revaluations data collected by the European System of Central Banks in the context of the statistical balance sheet reporting of the 'monetary financial institutions' (MFI) sector and discusses its usefulness in providing information for the analysis of changes in trading and banking book valuations at the aggregate banking sector level. In particular, we prove that on conceptual grounds whenever revaluations data are derived based on the direct recording of transactions, they are expected to represent a good proxy for gains/losses. These theoretical investigations are then tested empirically by comparing MFI balance sheet statistics with supervisory financial reporting (balance sheet and income statement) collected by the Bank of Italy from Italian credit institutions on a solo accounts basis. First, we reconcile data on outstanding amounts of securities holdings as reported in the two frameworks, breaking down the MFI balance sheet totals in the underlying IAS 39 portfolios. We then compare revaluations data with statistics on gains/losses at aggregated level, without breakdown by IAS 39 portfolios. While data on outstanding amounts match to a large extent, the reconciliation for flows is not achieved in full, against what our theoretical model would suggest. Further research is required to draw a definite picture on these results.

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<sup>1</sup> The views expressed in this paper are solely those of the authors and do not necessarily reflect the opinion of the Banca d'Italia or the European Central Bank. The work has benefited from useful comments and suggestions by Henning Ahnert, Jean-Marc Israël, Laura Mellone, Gianmatteo Carlo Piazza and Antonio Renzi.

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## 1. Introduction

Securities constitute a large part of banks' balance sheet assets in the euro area and valuation changes in such holdings (especially in trading books) determined the first wave of losses they suffered in the current crisis. The important role played by trading book holdings for the profit and loss accounts of many banks has intensified the need of timely monitoring, stress testing and possibly also forecasting the valuations of banks' trading books for financial stability analyses purposes. Banking books are equally relevant, as valuation changes are, in some cases, directly recognised at equity (i.e. imputed for accounting purpose to a specific reserve under 'equity'). An important impediment to this work is the limited availability of data from public sources which mostly rely on published financial reports. Such public reporting is typically available at quarterly, semi-annual or annual frequency and for listed banking groups only, with the implication that its relevance for the assessment of the financial stability of the banking sector as a whole could be limited. In addition, those reports include the consolidated income statements of banking groups where information on gains/losses on financial assets and liabilities are usually presented on a net aggregated basis only and thus without breakdowns by type of financial assets. Moreover, the scope of consolidation is also often not harmonised.

In contrast, more refined data can be available to national banking supervisory authorities, but the level of harmonisation across countries is rather limited, thus leading to a lower possibility of aggregation of data. In addition, profit and loss data are typically collected by supervisory authorities on an annual or semi-annual basis and with a certain time lag, thus entailing that no 'early-warning' indicators on banks' profitability can be developed in this framework.

This paper focuses on the statistical revaluations data collected monthly under Regulation ECB/2008/32 regarding balance sheet items statistics of monetary financial institutions (MFIs) and discusses its usefulness in providing information for the analysis of changes in trading and banking book valuations at the aggregate banking sector level (when they occur). The main differences between MFI balance sheet statistics<sup>5</sup> and supervisory consolidated data essentially relate to the reporting population and the geographical, sectoral and group consolidation scope, and are due to the respective primary purposes of the two frameworks (monetary analysis vs. supervision). In particular, in MFI balance sheet statistics the reporting population consists of the MFIs in each Member State according to the residency criterion used for macro-economic statistics under the international System of National Accounts ("host country principle"). No consolidation is performed for non-bank subsidiaries or across national boundaries. In this sense, data collected for credit institutions under the MFI balance sheet statistical framework are directly comparable with supervisory data based on the solo accounts of resident banks rather than to supervisory statistics relating to consolidated accounts which include also foreign branches and subsidiaries and, possibly, non-bank subsidiaries.<sup>6</sup> In light of the increasing interest on banks' supervisory consolidated and solo data both by a micro and macro-supervision, the availability of highly detailed statistical data related to credit institutions allows a deeper focus compared to supervisory data. In addition, as MFI balance sheet statistics are highly harmonised, they represent a homogeneous dataset to perform cross-country comparisons. In addition, the higher frequency of reporting

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<sup>5</sup> The MFI sector mainly comprises credit institutions, money market funds and central banks. The latter two categories are excluded from the analysis to allow comparability with supervisory data on banks. Securities holdings (holdings of shares and securities other than shares) by euro area credit institutions accounted, on average, for about 22% of their total assets in the period from January 2008 to December 2010.

<sup>6</sup> To be more specific, when reporting for MFI balance sheet purposes credit institutions exclude the activities of their foreign branches and subsidiaries while domestic branches and subsidiaries of foreign banks are included. In turn, supervisory data based on banks' solo accounts exclude foreign subsidiaries of domestic banks but not foreign branches; similarly, domestic subsidiaries of foreign banks are covered but not their domestic branches. For more details on methodological linkages and differences between MFI balance sheet statistics and supervisory data, see the ECB/Committee of European Banking Supervisors (CEBS) joint report "MFI balance sheet and interest rate statistics and CEBS' guidelines on FINREP and COREP."

(monthly) in conjunctions with the lower deadlines (few days after the reference period) are of particular interest for an “early warning” signal on the health of the banking system.

The discussion is organised as follows. First the classification and valuation of securities holdings in the accounting framework and for the purposes of MFI balance sheet statistics reporting are presented in Section 2. Section 3 then reviews the methodological issues underlying the derivation of revaluation data in the context of MFI balance sheet statistics and provides mathematical evidence that price (and exchange rate) revaluations match realised and unrealised gains/losses, at least in those cases where they are derived indirectly based on transactions data (based on the so-called transactions approach). Both sections focus on the case of Italy, where International Financial Reporting Standards (IFRS) are in use for accounting purpose both at consolidated and solo level, and price revaluations statistics are derived indirectly based on direct recording of transactions (transactions approach), so that the matching between revaluation adjustment and gains/losses should conceptually be achieved. Against this background, Section 4 attempts the reconciliation of figures between statistical and supervisory solo accounts reporting of banks. The reconciliation is first performed for data on outstanding amounts at the level of IAS 39 portfolios. This means that the monthly reporting for MFI balance sheet purposes may represent a reliable proxy for the balance sheet information on securities holdings that credit institutions shall deliver for supervisory purposes on a solo basis (typically with lower frequency and with a considerable lag). In turn, the comparison of flow data (gains/losses vs. revaluations) cannot be performed at the level of each IAS 39 portfolios but only on aggregated basis as the necessary detail is not readily available under the requirements of the Banca d’Italia for MFI balance sheet statistics. The comparison shows that the figures are not fully comparable in this case. Various reasons are identified to possibly explain the discrepancies, but a definite picture could only be drawn by effectively breaking down the revaluations data by accounting categories and, especially, concentrating on the revaluations of securities classified outside the IAS 39 portfolios. This will be the object of future research.

## **2. Classification and valuation of securities holdings**

Traditionally, financial reporting (either on a consolidated or on a solo basis) in euro area countries has followed national Generally Accepted Accounting Principles (GAAPs) which are based mainly on the accounting directives (86/635/EEC and 78/660/EEC). In broad terms, national GAAPs classify securities holdings in two portfolios, the trading and the banking book. The classification usually follows the business approach: the instrument held for trading shall be classified within the trading book while the instrument held to maturity or the strategic investment shall be classified within the banking book. Securities classified within the trading book shall be measured at the lower between cost and market price while securities classified in the banking book shall be measured at cost. However, as an exception following the amendment related to the introduction of IFRS within the European Union, securities within the trading book can be measured at fair value (i.e. market value or close equivalent to market value). Despite the common valuation principles, national GAAPs diverge with many respects, especially with reference to instrument classification and recording, thus leading to little comparability across national borders.

The introduction of IFRS for consolidated financial reporting in the European Union and their use, in some countries, in replacement of local GAAPs also for the solo accounts has changed the valuation rules across Member States<sup>7</sup>. Under IFRS securities holdings can be classified in four categories of financial assets: i) fair value through profit or loss (‘held for trading’ and ‘designated at fair value’); ii) held-to-maturity investments; iii) loans and receivables; and iv) available-for-sale financial assets. According to IAS 39 shares and other equity instruments can be classified only in category i) and iv) while debt securities can be classified in all the four categories. In turn, participations (investment in subsidiaries, joint ventures and associates that are represented by shares) are recorded separately.

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<sup>7</sup> While some countries adopted IFRS for the solo accounts, others kept the accounting directive framework for solo reporting. Similar differences remain for the consolidated financial reporting of non listed groups.

Under the IFRS framework there are two basic measurement criteria: fair value and amortised cost<sup>8</sup>. While participations can be valued under any of the two criteria<sup>9</sup>, IFRS prescribes the application of a specific criterion for each portfolio. In particular, securities classified at fair value through profit or loss (both ‘held for trading’ and ‘designated at fair value’) shall be measured at fair value, with changes of fair value recognised in profit and loss account. Securities classified as ‘held-to-maturity’ and ‘loans and receivables’ shall be measured at amortised cost. In turn, securities classified in the ‘available-for-sale’ category shall be measured at fair value, with changes of fair value directly recognised at equity.<sup>10</sup>

To summarise, under IFRS gains/losses only arise for securities recorded at fair value or when securities are sold. Gains/losses on securities measured at fair value are recognised in profit and loss if they are classified as ‘held for trading’ and ‘designated at fair value’, while gains/losses are recognised under equity if related to financial instruments classified in the ‘available-for-sale’ category.

**Table 1, Valuation and recording of gains/losses by IAS 39 portfolios**

IAS 39 portfolios	Valuation rule	Imputation of gains/losses
Held for trading	Fair value	Profit and loss
Designated at fair value	Fair value	Profit and loss
Held to maturity	Amortised cost	Profit and loss (only from sales)
Loans and receivables	Amortised cost	Profit and loss (only from sales)
Available for sale	Fair value	Equity
Participations	Amortised cost (mainly)	Profit and loss (only from sales)

The reporting framework of MFI balance sheet statistics in the euro area is laid down in Regulation ECB/2008/32. In particular, the valuation and treatment of balance sheet items are covered by the general requirement in Article 7 to follow the national transposition of Council Directive 86/635/EEC on the annual accounts and consolidated accounts of banks and other financial institutions, as well as any other international standards applicable. In addition, while Guideline ECB/2007/9 (Annex V, Part 2, Section 2), as amended, expresses a preference for market valuation, it recognises that in practice valuation practices for securities vary. In addition to market price, which is also the general requirement of the ESA95 and other international statistical and accounting practices, acquisition value and the lower of market price and acquisition value are also used. The Guideline accepts this as long as the book value does not diverge significantly from the market value. As regards portfolio classification, in MFI balance sheet statistics securities holdings are not broken down according to the accounting classification, although such additional level of breakdown might be available at national level under the national application of Regulation ECB/2008/32; see Section 4 for further details in the case of Italy. It is worth stressing that MFI balance sheet statistics do not directly cover data on the income account of MFIs. Specifically, gains/losses on securities holdings in the ‘available-for-sale’ category are indistinguishably included in the balance sheet item ‘capital and reserves’<sup>11</sup>; similarly, gains/losses for securities held for

<sup>8</sup> The amortised cost is the amount at which the financial asset is measured at initial recognition minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction for impairment or uncollectibility (IAS 39, par. 9). It thus follows that equity is recorded at acquisition value (cost) under this criteria.

<sup>9</sup> In practice, participations are carried at cost in most cases.

<sup>10</sup> Investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured shall be measured at cost.

<sup>11</sup> Banca d’Italia actually separately identifies these gains/losses and allocates them to ‘remaining liabilities’ when compiling the statistical returns to the ECB for MFI balance sheet purposes. This leads to some differences between the item ‘capital and reserves’ in this framework and the corresponding supervisory reporting.

trading or subject to fair value option are recorded under ‘remaining liabilities’, without separate identification. However, data on price revaluation and exchange rate adjustments derived under the requirements of Regulation ECB/2008/32 may prove to be helpful, but first a detailed overview of their meaning is necessary.

### 3. Price revaluation data in the context of MFI balance sheet statistics <sup>12</sup>

An important element in MFI balance sheet statistics is the distinction between transactions and other factors affecting balance sheet outstandings and their change over a reference period. These other factors comprise valuation effects arising from changes in prices or in exchange rates on the one hand, and reclassifications and what the ESA95 calls other changes in the volume of assets on the other hand. Data on price and exchange rate revaluations of securities are thus available to make possible the derivation of financial transactions, which, according to Regulation ECB/2008/32, ‘are computed by the ECB as the difference between stock positions at end-month reporting dates, from which the effect of changes that arise due to influences other than transactions is removed.’ Hence, data on revaluations for price and exchange rate developments are collected for the statistical purpose of compiling transactions rather than to obtain information on holding gain/losses as such. In particular, the interpretation of price revaluation adjustments much depends on the accounting rules that are followed by MFIs when reporting under the MFI balance sheet statistical framework and is related to the business model of the reporting entity.<sup>13</sup>

Financial transactions on securities are derived by the ECB from input received from NCBs, which transmit data on *outstanding amounts* (as collected from reporting agents), *price revaluation adjustments* and *reclassifications and ‘other’ adjustments* (in one category). While the latter adjustments are derived directly by the NCBs using available information, the derivation of data on price revaluations of securities is not based on a unified framework. In addition, proxies for valuation effects arising from exchange rate fluctuations are estimated directly by the ECB (unless provided by NCBs) based on a standardized method of adjustment for all relevant items.<sup>14</sup>

Regarding the derivation of revaluations data, NCBs can address reporting agents in two distinct ways. One approach is to let reporting agents report directly observed transactions from which NCBs derive data on price revaluations. The two approved methods for doing this, the *transaction method* and the *balance sheet method*, are reviewed next, but this paper will mainly focus on the transaction method, which is currently in use in Italy. Whenever MFIs record transactions, the NCB will derive price revaluation adjustments to be transmitted (on an aggregated basis) to the ECB. Alternatively, MFIs can report price revaluation adjustments directly to the NCB<sup>15</sup>.

In those cases where reporting agents are required to directly record transactions in securities, they may do so following two distinct methods: the *transaction method* or the *balance sheet method*.

#### - *Transaction method*

The *transaction method* records all sales and purchases of items held on balance sheets at the start and/or end of a reporting period, and also transactions reversed within the

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<sup>12</sup> Data on price revaluations of euro area MFIs holdings of securities (broken down by instrument, sector of the issuer and currency of denomination) are published on a monthly frequency on the ECB website; see <http://www.ecb.int/stats/money/aggregates/aggr/html/index.en.html>.

<sup>13</sup> For a given change of market values, the reported revaluations will be higher when the share of the securities portfolio reported at current market value is higher.

<sup>14</sup> The adjustment is calculated at aggregate level for securities originally denominated in GBP, USD, JPY and CHF. No exchange rate adjustment is derived for balances in other currencies. For further details, see Part 2(A) Section 2 of the “Manual on MFI balance sheet statistics” (forthcoming).

<sup>15</sup> For a detailed overview of approach, see Part 1(A) Section 6 of the “Manual on MFI balance sheet statistics” (forthcoming).

reporting period. The transaction method requires the flow to be valued at the actual transaction value, which is normally the market value of the securities on the transaction day, in accordance with the ESA95.

The transaction approach may make it difficult to relate recorded transactions in some categories to developments in amounts outstanding. This is because recorded transactions will include purchases that are reversed during the period, whose effects are thus not visible on the end-of-period balance sheet positions for the securities portfolio. Moreover, transactions may be valued at different prices from those at which the relevant securities are valued on the balance sheet (where they do indeed appear on the balance sheet): suppose that a transaction relates to securities in the “held-to-maturity” portfolio; while MFIs will report the transactions at transaction value, the corresponding balance sheet outstandings will be reported at amortised cost.

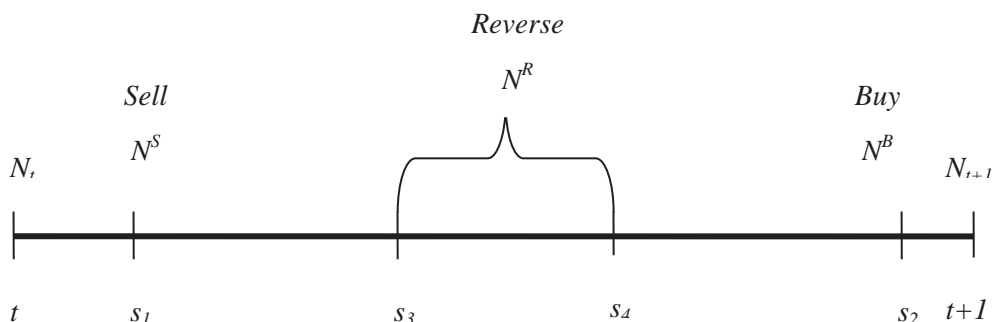
- *Balance sheet method*

The *balance sheet method* records all sales and purchases of items held on balance sheets at the start and/or end of a reporting period, but not the transactions reversed within the reference period.

Under the *balance sheet method*, the sale during the period of any securities held on the balance sheet at the end of the previous period is deemed to have taken place at the price at which the securities were recorded on the previous period’s balance sheet, irrespective of the price at which the sale actually took place. Similarly, the purchase during the period of any securities retained on the balance sheet at the end of the current period is deemed to have taken place at the price at which the securities are recorded on the current period’s balance sheet.

The example below provides an overview of the steps underlying the derivation of transactions and the corresponding revaluation adjustments under the transaction method, which is the one applied by Italian MFIs. A similar discussion can be drawn for the balance sheet method but this is not covered in this paper.

Suppose that an MFI trades only in one security  $S$ , and denote by  $N_t$  the number of such securities at time  $t$ . Between  $t$  and  $t+1$  the MFI sells  $N^S$  securities at time  $s_1$  and purchases  $N^B$  securities at time  $s_2$  which are then kept until time  $t+1$ . In addition, a number  $N^R$  of securities are purchased and sold back during the period at time  $s_3$  and  $s_4$  respectively.



Denoting by  $N^K$  the number of securities that are kept on the balance sheet between  $t$  and  $t+1$ , it is easy to see that  $N_t = N^K + N^S$  and, similarly,  $N_{t+1} = N^K + N^B$ . Let now  $p_t$  represent the value at which securities  $S$  are carried on balance sheet at time  $t$  and  $p'_t$  be the corresponding market value. Without loss of generality, assume that all securities are recorded according to the same valuation criterion and that the same carrying value applies to

each of the securities within  $N^K$ ,  $N^S$  and  $N^B$  ( $p_t^K, p_t^S$  and  $p_t^B$  denoting the corresponding carrying values). The outstanding amounts  $S_t$  of the securities holdings and the corresponding transactions  $T_t$  satisfy the following equations at the generic time  $t$ :

$$S_t = p_t^K \times N^K + p_t^S \times N^S \quad [1]$$

$$S_{t+1} = p_{t+1}^K \times N^K + p_{t+1}^B \times N^B \quad [2]$$

$$T_{t+1} = p'_{s_2} \times N^B - p'_{s_1} \times N^S + (p'_{s_4} - p'_{s_3}) \times N^R \quad [3]$$

In light of the previous discussion, the difference between the change in the stocks and transactions equals the sum of price revaluation adjustments  $R_{t+1}$  and revaluations arising from changes in exchange rates  $E_{t+1}$ <sup>16</sup>:

$$R_{t+1} + E_{t+1} = (S_{t+1} - S_t) - T_{t+1} \quad [4]$$

**Example:** On 31 January an MFI holds 10 bonds issued by company A which were bought at 98 on 15 January; the price at 31 January is 100. In the course of February, the MFI buys one more bond of company A at 101 (on 10 February) and sells two of the bonds of company A which were owned on 31 January at 102 (on 20 February). Hence, the number of securities kept during the entire period  $N^K = 8$ , the number of securities bought  $N^B = 1$  and the number of securities sold  $N^S = 2$ . In addition on 10 February it buys one bond issued by company B at 88 and sells it on 20 February at 90; i.e. the number of reversed purchases  $N^R = 1$ . On 28 February the MFI then holds 9 bonds issued by company A, whose price is 101 on that date; it holds no bonds issued by company B. The bonds are assumed to be euro denominated, so no exchange rate-related effects arise.

*MFI's bond portfolio*

		15 Jan	31 Jan	10 Feb	20 Feb	28 Feb
<b>Operations</b>		Buys 10 A		Buys 1 A Buys 1 B	Sells 2 A Sells 1 B	
<b>Security A</b>	<b>Market price</b>	98	100	101	102	101
	<b>Holdings</b>		$N_t=10$	$N^K=8, N^B=1, N^S=2, N^R=0$		$N_{t+1}=9$
<b>Security B</b>	<b>Market price</b>			88	90	
	<b>Holdings</b>		$N_t=0$	$N^K=0, N^B=0, N^S=0, N^R=1$		$N_{t+1}=1$

According to the ESA95, all sales and purchases should be treated as transactions, including the positions that are reversed during the reference period. In addition, transactions should be valued at market price. Thus, under the transaction method and applying equation [3], **transactions in securities amount to -105**, which is the sum of the following:

- The MFI buys 1 A bond (1x101) → securities inflow of 101;
- The MFI sells 2 A bonds (2x102) → securities outflow of 204;

<sup>16</sup> Without loss of generality, we do not take into account here the impact of reclassifications.

- The MFI buys 1 B bond at 88 and sells it at 90  $((90-88)\times 1)\rightarrow$  (net) securities outflow of 2.

As regards the derivation of revaluation adjustments, the results will generally depend on the valuation method. For example, let *securities be carried on the balance sheet at market price* (or, more in general, at fair value); equations [1-2] yield:

<b>Debt securities held on balance sheet at end-January</b> (10x100)	1000
<b>Debt securities held on balance sheet at end-February</b> (8x101+1x101)	909
<b>Change in balance sheet holding</b>	-91
<b>Transactions</b>	-105
<b>Revaluation adjustment</b> (derived by the NCB as a residual)	+14

Suppose now that *securities are recorded on the balance sheet at acquisition price*; equations [1-2] yield:

<b>Debt securities held on balance sheet at end-January</b> (10x98)	980
<b>Debt securities held on balance sheet at end-February</b> (8x98 + 1x101)	885
<b>Change in balance sheet holding</b>	-95
<b>Transactions</b>	-105
<b>Revaluation adjustment</b> (derived by the NCB as a residual)	+10

To identify the linkages between price and exchange rate revaluation adjustments and (realised and unrealised) gains/losses imputed to profit and loss or equity from  $t$  to  $t+1$ , it is sufficient to substitute expressions [1-3] into equation [4] and collect the similar terms:

$$R_{t+1} + E_{t+1} = (p_{t+1}^K - p_t^K) \times N^K + (p_{t+1}^B - p'_{s_2}) \times N^B + (p'_{s_1} - p_t^S) \times N^S + (p'_{s_4} - p'_{s_3}) \times N^R \quad [5]$$

The first two terms represent the unrealised gains/losses related to changes in valuation of the securities kept from  $t$  to  $t+1$  (change in carrying value) or bought during the period (carrying value minus cost). The latter two terms represents the realised gains/losses related to securities held at  $t$  but sold during the period (selling price minus carrying value) and to securities purchases reversed during the period (selling price minus cost).

It thus follows that, from a conceptual perspective, price revaluation statistics obtained under direct derivation of transactions with the transaction method, supplemented by data on the exchange rate adjustment, provide good indication of MFIs' gains/losses which occur during the reference period. Moreover the matching should hold for accounting categories, as equation [5] holds true for all valuation criteria.<sup>17</sup>

The example above can be used to shed some more light on these considerations.

**Example** [continued]: Suppose that securities are marked to market. There will be unrealised gains related to revaluation of the securities which are kept during the period  $[(101-100)\times 8]$  while no unrealised gain is recorded on the securities which were bought during the period as the acquisition price is the same as the market price at the end of the period. In turn, there are realised gains on all securities sold during the period  $[(102-100)\times 2 + (90-88)\times 1]$ . Similarly, suppose that securities are carried at acquisition price. By definition there will be no unrealised gains in this case as no changes in valuation will occur on balance sheet. Conversely, there will be realised gains on the securities which are sold during the period  $[(102-98)\times 2 + (90-88)\times 1]$ . Equation [5] can also be used to directly obtain the results.

<sup>17</sup> It should be stressed that gains/losses implied by MFI balance sheet statistics might still differ from gains/losses effectively imputed in the income statement as the valuation criteria might differ. For example, Banca d'Italia requires credit institutions to value quoted securities (i.e. securities listed on a stock exchange for public trading) classified as 'held to maturity' and 'loans and receivables' at fair value for MFI balance sheet purposes, while the financial statement follows the general IFRS requirements to value those items at amortised cost.



#### 4. Reconciling MFI balance sheet revaluations with supervisory data: the case of Italy

In the case of Italy, the data requirements for credit institutions (based on solo accounts) are addressed in a unique framework under Banca d'Italia Regulation No 272<sup>18</sup> which includes both statistical and supervisory needs and relies on a single accounting framework (IFRS). Among other purposes, this regulation covers the requirements of Regulation ECB/2008/32 on MFI balance sheet statistics as well as the reporting of MFI profit and loss and balance sheet items in accordance with supervisory reporting. In particular, data on securities holdings (outstanding amounts and transactions) are collected security-by-security for each reference underlying accounting portfolios on a monthly basis and are used for the compilation of MFI balance sheet aggregates as well as for supervisory monitoring.<sup>19</sup>

Banca d'Italia Regulation No 272 also covers semi-annual financial reporting from credit institutions in accordance to supervisory principles; a comparison between these reported aggregates and the ones derived from the security-by-security data may thus shed some light on the actual composition of the aggregated securities holdings that are shown in the context of MFI balance sheet statistics. The comparison is limited to December 2009 and December 2010 as the requirements before the entry into force of the current version of Banca d'Italia Regulation No 272 would not allow a similar exercise.

**Table 2, Credit institutions' securities holdings by accounting portfolios (EUR millions)**

Shares	2009		2010	
	S-b-s reporting	Supervisory	S-b-s reporting	Supervisory
Held for trading	4,636	4,761	5,911	5,800
Fair value through profit and loss	1,670	1,819	1,961	1,673
Held-to-maturity				
Loans and receivables				
Available for sale	15,579	16,951	15,480	16,552
Participations	176,548	174,037	165,258	165,195
<b>Total</b>	<b>198,433</b>	<b>197,568</b>	<b>188,610</b>	<b>189,219</b>
Other	27,087		33,106	
<b>MFI balance sheet statistics</b>	<b>225,520</b>		<b>221,716</b>	

Securities other than shares	2009		2010	
	S-b-s reporting	Supervisory	S-b-s reporting	Supervisory
Held for trading	81,605	85,919	78,175	78,254
Fair value through profit and loss	2,066	2,317	1,711	1,681
Held-to-maturity	13,702	13,664	16,101	14,290
Loans and receivables	259,049	246,558	145,659	152,293
Available for sale	118,964	109,557	152,253	154,963
Participations				
<b>Total</b>	<b>475,386</b>	<b>458,014</b>	<b>393,899</b>	<b>401,480</b>
Other	39,093		231,752	
<b>MFI balance sheet statistics</b>	<b>514,479</b>		<b>625,651</b>	

Sources: Banca d'Italia and ECB.

Notes: The two sets of statistics on securities holdings by accounting portfolio are based on security-by-security and supervisory reporting by credit institutions under Banca d'Italia Regulation No 272 of 30 July 2008 respectively. Supervisory reporting also cover foreign branches of domestic banks, but excludes domestic branches of foreign banks. The totals relating to MFI balance sheet statistics reflect the holdings by all resident credit institutions (including domestic branches of foreign banks, but excluding foreign branches of domestic banks) and also cover balance sheet items that are not included in the accounting categories (like securities derecognized for statistical purpose and securities issued that have been bought back by the banks).<sup>20</sup>

<sup>18</sup> Banca d'Italia Regulation No 272 of 30 July 2008 – 2<sup>nd</sup> update.

<sup>19</sup> This is consistent with the requirements of Regulation ECB/2008/32, which provides that security-by-security reporting is allowed to the extent that aggregated data can be derived in accordance with the specified minimum statistical requirements. In particular, under Banca d'Italia Regulation No 272 security-by-security reporting includes information on the accounting categories at the level of each security, making thus possible the allocation by IAS 39 portfolios.

<sup>20</sup> As already clarified above, data for credit institutions are derived excluding from MFI statistics the securities holdings of money market funds and Banca d'Italia.

The aggregations based on security-by-security data match, to a large extent, the supervisory aggregated data reported to the Bank of Italy. The small differences are possibly related to the inclusion of data on foreign branches of domestic banks under the supervisory requirements. In addition, supervisory data might cover changes in fair value or impairments (i.e. so-called value adjustment) of unquoted securities that are imputed to the reference period when deriving the official (annual) income statement while MFI balance sheet statistics reflect them in months following the end of the year. More importantly, as noted in footnote 17, differences probably arise by the specific requirement by Banca d'Italia to value quoted securities classified as 'held to maturity' and 'loans and receivables' at fair value (following the general principles of the MFI regulatory framework) although for accounting purposes these are carried at amortised cost, in accordance to IFRS principles.

Despite the differences, this matching is of particular interest as it justifies the usage of the reported security-by-security data for the regular monitoring of the evolution and compositions of the securities portfolios of resident credit institutions. This means that, (at least) in the case of Italy the monthly report for statistical-monetary purposes represents a good proxy for the balance sheet that credit institutions shall deliver for supervisory purposes.

Various factors are behind the difference between the outstanding amounts of securities recorded in the accounting categories and the figures shown in MFI balance sheet statistics. For example, the supervisory reporting requirements do not address domestic branches of foreign banks and therefore the securities holdings of these units are included in the residual category "Other" as these are included in the MFI balance sheet statistics totals. In addition, the capital invested by domestic banks in their foreign branches is covered by the MFI balance sheet item "shares" but is not included in any of the accounting categories as it is considered an intra-entity transaction. Similarly, debt securities that are temporarily retained by the issuing credit institutions (e.g. covered bonds used as collateral in inter-bank lending operations) are not recorded in any accounting portfolio following the offsetting provisions of the IFRSs although they are part of the MFI balance sheet item "securities other than shares"<sup>21</sup>.

An important observation is the increase of the category "Other" from about EUR 39 billions in 2009 to EUR 232 billions in 2010 for securities other than shares. This is strictly connected to the option provided by the MFI balance sheet statistics regulation to use the IAS rules in the recognition of financial assets (derecognition criterion). In this case, from an accounting point of view securitised loans are still recognised on the balance sheet of the originator and same approach has been extended for MFI balance sheet statistics purposes, where data are elaborated to include these securities in a separate category in the statistical returns of credit institutions to the Banca d'Italia (and included in the MFI balance sheet totals).<sup>22</sup>

Replicating Table 2 for the flows data (e.g. revaluations and gains/losses) corresponding to the outstanding amounts shown above is not straightforward. While supervisory reporting on a solo accounts basis includes breakdowns of gains/losses by IAS 39 portfolios, this level of detail is not readily available under the MFI balance sheet framework. For example, we use in our comparisons exchange rate adjustments that are estimated by the ECB at high level of aggregation and these might differ from the ones used by Banca d'Italia when deriving price revaluations. In addition, the algorithm which derives price revaluation adjustments at Banca d'Italia cannot be easily replicated for each of the identified categories. Therefore the comparison can only be performed with the MFI balance sheet total revaluations data for shares and securities other than shares respectively.

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<sup>21</sup> In the context of MFI balance sheet statistics, the preferred (but not compulsory) treatment for holdings of own instruments is to record them on a net basis. See, for instance, Part I(A), Section 2 of the "Manual on MFI balance sheet statistics" (forthcoming) or Annex I, Part I(II) of "Guidance Notes to the Regulation ECB/2001/13".

<sup>22</sup> It should be underlined though that the relative size of the category "Other" does not hinder the comparison between MFI balance sheet revaluations data and supervisory gains/losses per se. We will come back on this issue later in our discussion.

Before looking at the figures, it is worth summing up what we expect in terms of consistency between supervisory data and MFI balance sheet statistics on revaluations:

- For securities classified in the categories ‘fair value through profit or loss’ (held for trading or designated at fair value) gains/losses recorded in profit or loss should match the corresponding (price and exchange rate) revaluation adjustments. Small differences might arise though due to value adjustments of unquoted securities.
- For securities classified in the ‘available-for-sale’ category gains/losses recognised at equity should match with the corresponding (price and exchange rate) revaluation adjustments. As above, small differences might arise though due to value adjustments of unquoted securities.
- For securities classified as ‘held to maturity’ or ‘loans and receivables’ gains/losses mainly arise when securities are sold or from specific impairment of the carrying amount. From a theoretical point of view the match with the corresponding revaluation adjustment still holds, but differences might arise due to the requirement by Banca d’Italia to value quoted securities at fair value for MFI balance sheet statistics compared to supervisory reporting (see also footnote 17 above);
- For securities (shares) classified as ‘participations’, gains/losses for supervisory purposes could derive from sales, fair value measurement as well as specific impairment. In principle they should match with the corresponding revaluation adjustments.

**Table 3, MFI balance sheet revaluations vs. supervisory gains/losses (EUR millions)**

	Shares		Securities other than shares	
	2009	2010	2009	2010
<b>Gains/losses</b>				
Held for trading	-888	-3,345	3,333	-309
Fair value through profit and loss	109	37	240	-237
Held-to-maturity			114	16
Loans and receivables			-40	80
Available for sale	980	351	3,103	-3,915
Participations	961	877		
<b>Total</b>	<b>1,162</b>	<b>-2,081</b>	<b>6,751</b>	<b>-4,364</b>
<b>MFI balance sheet statistics revaluations</b>				
Price revaluations	-12,294	-2,018	-248	-966
Exchange rate revaluations			-163	373
<b>Total</b>	<b>-12,294</b>	<b>-2,018</b>	<b>-411</b>	<b>-593</b>

Sources: Banca d’Italia and ECB.

Notes: Gains/losses are derived under the supervisory reporting requirements of Banca d’Italia Regulation No 272 of 30 July 2008. Price and exchange rate revaluations as available in MFI balance sheet statistics. Revaluations for changes in exchange rates are estimated at the ECB and may differ from the data used by Banca d’Italia to derive price revaluations. No exchange rate adjustment is currently performed for shares.

This background then hints at a high level of consistency between the two datasets by a theoretical perspective. In contrast, Table 3 shows that only for shares in 2010 gains/losses are directly comparable with the revaluations data (about 2.1 vs. 2 billions of losses). In turn, 2009 data shows large differences for shares: while supervisory data records a gain for about 1.2 billion, MFI balance sheet statistics show a negative revaluation for about 12.3 billions. For securities other than shares the results are also difficult to interpret: while MFI balance sheet statistics show for 2009 and 2010 negative revaluations for about 0.4 and 0.6 billions respectively, supervisory data record a gain of about 6.8 billions in 2009 (equally split between the ‘held for trading’ and the ‘available for sale’ categories), and a loss of about 4.4 billions in 2010 (mainly related to the ‘available for sale’ category).

Explaining the differences is not straightforward, and accurate answers can only be drawn by effectively decomposing revaluations data by the underlying accounting categories. This decomposition is not provided in this paper, but it represents a natural direction for further

future research. Still we can hint in various directions to possibly give account of the differences, also in light of the previous discussions.

First, the requirement by Banca d'Italia to value quoted securities classified as 'held to maturity' or 'loans and receivables' at fair value. While data on outstanding amounts do not show big differences, the impact on flows is most likely higher and its separate identification could shed some light on the overall differences. In addition, unquoted securities can be subjected to regular value adjustments which can be reflected differently in the two frameworks due to time of recording differences. Moreover, for 2009 data on securities other than shares the comparison is more problematic due to changes in the recognition of securities related to securitisation transactions. These accounting of these operations in the two frameworks should also be appropriately studied. Finally, the other categories included in Table 2 under "other" need some consideration as they might further explain divergences between MFI balance sheet and supervisory figures. In particular:

- Securities holdings of branches of foreign banks only accounted for about 4.5% of the total holdings of Italian credit institutions and therefore their impact is not expected to be sizeable. Still taking into account revaluations on these securities holdings might help the reconciliation.
- The capital invested by domestic banks in foreign branches is also rather limited. In addition, these shares are recorded at cost and limited transactions affect this item.
- Securities other than shares retained by the issuing banks and assets backed securities retained by the bank originating the underlying loans should also play a minor role as they are typically recorded at cost and are not actively traded. Still much the impact of impairments on these categories must be studied in depth and might contribute to the discrepancies.

## **5. Concluding remarks**

In this paper we attempt the reconciliation of MFI balance sheet statistics with supervisory data based on solo accounts in the case of Italy. The specificity of the case relies on the fact that the data collections for the two purposes are addressed in a unique framework and rely on the same accounting system (IFRS). The reconciliation is first performed for data on outstanding amounts at the level of individual IAS 39 portfolios. This means that the monthly reporting for MFI balance sheet purposes can be used to derive reliable proxies to monitor the evolution and compositions of the securities portfolios of resident credit institutions regularly (with a higher frequency and lower lag compared to supervisory data).

As regards (realised and unrealised) gains/losses, MFI balance sheet statistics do not cover data on the income statement which could be used as a direct proxy. Still, data on (price and exchange-rate) revaluations of credit institutions' securities holdings (collected to reconcile data on outstanding amounts with transactions) might represent a good proxy. Overall the degree of reconciliation will depend on a number of factors, but we have proved that whenever transactions data are collected directly based on the so-called 'transactions approach' the reconciliation should be complete, at least on a theoretical basis.

The Italian collection framework fulfils these conceptual pre-conditions, but the comparison of actual flow data (gains/losses vs. revaluations) cannot be performed at the level of each IAS 39 portfolios but only on aggregated basis as the necessary detail is not readily available under the requirements of Banca d'Italia for MFI balance sheet statistics. The comparison shows that the figures cannot be reconciled in this case. Various reasons are identified to possibly explain the discrepancies, but a definite picture can only be drawn by effectively breaking down the revaluations data by accounting categories and, especially, concentrating on the revaluations of securities classified outside the IAS 39 portfolios. An effective reconciliation exercise by IAS 39 portfolio would hint that, although on an aggregated basis there is low comparability, revaluations data (appropriately broken down) by accounting category would still represent reliable indicators for monitoring the activity of banks by a financial supervision perspective. This will be the object of future research.

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