



## Thirtieth Meeting of the IMF Committee on Balance of Payments Statistics

Paris, France  
October 24–26, 2017

BOPCOM—17/18

### **Pilot Exchange on Sectorization of Nonresident Issuers in the Context of CPIS**



## PILOT EXCHANGE ON SECTORISATION OF NON-RESIDENT ISSUERS IN THE CONTEXT OF CPIS ECB PERSPECTIVE

### INTRODUCTION

*An initiative to improve sectorisation in CPIS initiated by the IMF*

1. At the meeting of the Balance of Payments Committee held on 24-26 October 2016 the International Monetary Fund (IMF) raised the need to improve the quality of the information on the economic sector of non-resident issuers of securities. For that purpose, the IMF launched the idea of a possible provision of sector information on securities issuers by statistical compilers to a central hub. This hub could potentially become a central point of information for statistical compilers, especially in the context of the Coordinated Portfolio Investment Survey (CPIS).

*A pilot exercise involving the ECB and US Federal Reserve was launched by the IMF*

2. As a follow up, the IMF, in cooperation with the US Federal Reserve (FED) and the European Central Bank (ECB), launched a pilot exercise for the exchange on basic information on the issuers of securities. In concrete terms, the FED and the ECB agreed on a one-off exchange of information on a subset of securities issued in each economic area which are held or could be potentially held by residents in the other area. The attributes exchanged included the identification number of the security as well as the name, the country of residency and the economic sector of the issuer.

*This note provides background information and a first assessment on the pilot exercise*

3. In line with the purposes of the pilot exercise, this note describes the source of the ECB data on sectorisation, the actions taken as part of the exercise, draws a number of conclusions from the experience and suggests possible actions to follow up on to increase the sharing of information across statistical compilers. The views contained in this note are those of the ECB, which should be complemented by the FED and the IMF in order to get a complete picture and decide on an optimal follow up.

*The exercise has confirmed some basic pre-conditions for handling micro-data*

4. From the ECB perspective the exercise has confirmed the need to fulfil certain pre-conditions in order to compile and share micro-data in an automatic way. These refer in the first place to the need for standardisation of the data at a global level, also the application of statistical international standards in a harmonised way across countries and finally the need to recognise and address legal, technical and contractual limitations in the exchange of data.
5. The rest of this note provides further details on the pilot exercise. Section 1 covers the ECB analysis performed on the data received from the FED. Section 2 explains the Centralised Securities Database (CSDB) data provided to the FED and the restrictions on the possible provision of data outside the European Union. Finally Section 3 presents the conclusion and possible follow up to the pilot exercise from the ECB perspective. The annex describes the CSDB, which is the basis for CPIS sectorisation in the European Union.

**In view of the results the ECB would propose a follow up along the following lines:**

- **BOPCOM members could promote the use of the ISIN and LEI in their respective jurisdictions;**
- **BOPCOM members could further align in the application of international statistical standards;**
- **ECB and FED could repeat the exchange of data next year, possibly with a narrower focus.**

## **SECTION 1: Pilot Exercise – Data from the FED to check ECB information**

*Exchange of data between the ECB and the FED subject to specific conditions*

6. As a starting point for a potential future multilateral exchange of information on the issuers of securities, as suggested by the IMF, the ECB and the FED agreed on a one-off exercise. From the ECB side this exercise was possible on the basis of the specific conditions laid down in the contracts that the ECB has with commercial data providers and EU law regarding confidential statistical information and also restricted to them. In order to ensure compliance with the rules the data exchange was formalised in documents signed by those parties. It is noted that the IMF could not receive any micro-data as it is not covered in the above mentioned provisions. See the annex to this note for further details

*Subset of CSDB data sent to the FED for feedback*

7. A first side of the pilot exercise was the reception of sector data from the FED in order to assess the possible use of these data by the ECB. For that purpose the ECB sent to the FED a subset of the information on securities contained in the Centralised Securities Database (CSDB) managed by the European System of Central Banks (ESCB). Out of the close to one million alive securities issued by US residents and recorded in the CSDB, the ECB extracted a subset of 123,834 securities, selecting those securities with the largest amounts outstanding and market capitalisation, as these are the ones most likely to be held cross-border. A sufficient representation of all economic sectors was also ensured.
8. The ECB provided the ISIN of the securities and the name, country and sector of the issuer to the FED, as reflected in the CSDB data by May 2017. The FED compared these data with its own information and provided to the ECB with the sector classification according to its records.

Table 1 - Overview of results of data check ECB vs. FED for US Securities

		Count ISINs	% of Total	% of Sub - Cat.	Count Entities (*)	% of Total(*)	% of Sub -Cat. (*)
<b>Total</b>		123,834	100%	-	29,790	100%	-
<b>A</b>	<b>FED Feedback Provided</b>	79,576	<b>64%</b>	-	19,446	<b>65%</b>	-
	A.1 <i>Sector Confirmed</i>	66,846	54%	<b>84%</b>	14,965	50%	<b>77%</b>
	A.1.1 <i>Of which - FED Sector Match</i>	30,086	24%	45%	12,198	41%	82%
	A.1.2 <i>Of which - FED has no Information</i>	36,760	30%	55%	3,852	13%	26%
	A.2 <i>Different Sector</i>	12,730	10%	<b>16%</b>	4,651	16%	<b>24%</b>
	A.2.1 <i>Municipal Bond Class. by Sector of Activity</i>	3,628	3%	<b>28%</b>	1,023	3%	<b>22%</b>
	A.2.1.1 <i>Of which - FED lacks full subsector</i>	1,823	1.5%	50%	428	1%	42%
	A.2.2 <i>Financial Subsidiaries Classified as NFCs by FED</i>	246	0.2%	<b>2%</b>	76	0.3%	<b>2%</b>
	A.2.3 <i>No Separate Classification for Invest. Funds by FED</i>	1,950	2%	<b>15%</b>	1,901	6%	<b>41%</b>
	A.2.4 <i>Other conceptual differences in classification of specific institutions (e.g. REITs, bank holding companies, airline pass-through bodies)</i>	507	0.4%	<b>4%</b>	328	1%	<b>7%</b>
	A.2.5 <i>Remaining Discrepancies</i>	6,399	5%	<b>50%</b>	1,319	4%	<b>28%</b>
<b>B</b>	<b>No Feedback Provided</b>	44,258	<b>36%</b>	-	13,753	<b>46%</b>	-
<b>C</b>	<b>Same Issuer Securities Found in Multiple Categories (A – B)</b>	46,540	<b>38%</b>	-	4,754	<b>16%</b>	-
	C.1 <i>Overlap: FED Sector Match &amp; FED has no information</i>	17,895	14%	<b>38%</b>	1,085	4%	<b>23%</b>
	C.2 <i>Overlap: Sector Confirmed &amp; Different Sector</i>	1,049	1%	<b>2%</b>	170	1%	<b>4%</b>
	C.3 <i>Overlap: Sector Confirmed &amp; No Feedback Provided</i>	9,101	7%	<b>20%</b>	2,291	8%	<b>48%</b>
	C.4 <i>Overlap: Different Sector &amp; No Feedback Provided</i>	18,495	15%	<b>40%</b>	1,208	4%	<b>25%</b>

(\*) The sum of all the entities and the percentages in categories A+B do not sum to 100% due to the existence of category C (i.e. overlaps between categories)

*FED provided feedback on more than half of the securities, mainly confirming sector or with no information*

9. As shown on table 1, until end-June 2017 the FED could check and provide feedback on 64% (row A) of those provided by the ECB. Out of those for which feedback confirmed the issuer sector, in 55% (row A.1.2) of the cases the FED could not provide any information and in 45% (row A.1.1) of the cases the sector in the CSDB was confirmed based on data available by the FED.

*Part of the discrepancies were due to lack of full information by the FED*

10. For the remaining 16% of the cases (row A.2), for which the ECB sectorisation was different from the FED sectorisation, almost half of them were either due to the fact that FED could not provide the full subsector data (e.g. no distinction between central, state and local government, no separate classification for investment funds), FED classifies municipal bonds by sector of activity if known, or because the FED classifies financial subsidiaries of non-financial corporations also as non-financial corporations, while the ECB classifies them as financial subsidiaries.

*Manual work was performed by the ECB to identify the reason of the remaining differences*

11. Intensive manual work was conducted by the ECB in order to identify the reason for the remaining discrepancies. In cooperation with the FED other possible reasons for discrepancies were identified as due to conceptual differences in the classification of specific institutions like Real Estate Investment Trusts (REIT), airlines pass-through bodies and bank holding companies. The analysis showed that the remaining discrepancies accounted for approximately 6% of the total instruments and 5% of the total entities. Once manual work was performed, taking into account the conceptual differences in classification, the actual amount of remaining discrepancies came closer to 5% of the total instruments and 4% of the total entities (row A.2.5). In those remaining cases, random mistakes were identified in both CSDB and FED data.
12. Also inconsistencies were detected in the FED data, as the sectorisation of securities issued by the same issuer was only provided for some securities but not for others, or securities with the same issuer present in multiple conflicting subcategories (e.g. same issuer issuing ISINs whose sector is confirmed as a sector match by the FED, and also issuing other ISINs for which FED has indicated disagreement in issuer sector classification. Such overlapping cases coincided with 16% of the total entities (row C).

*Only a limited set of wrong classification detected in the ECB*

13. Given that manual investigation was needed not all remaining discrepancies (row A.2.5) could be individually checked by the ECB by the time this note was written, but considering the confirmed CSDB errors, it is estimated that 9% of the securities for which conflicting feedback was received could be directly corrected with that feedback (representing 0.5% of total instruments provided). In around 15% of the instruments the direct use of FED data would introduce other errors in CSDB sectorisation. For 2%, investigations show that both FED and CSDB data may need to be adjusted, and the remainder of the cases are still under investigation.

## SECTION 2: Pilot Exercise – Data from the ECB to check FED information

### *Subset of FED data sent to the ECB for feedback*

14. The other side of the pilot exercise consisted on proving the possible usefulness of ECB data check FED information. For that purpose the FED sent to the ECB a file containing data referred to securities issued by EU residents and held or potentially held by US residents. The file containing 26,637 securities with ISIN code and 11,874 securities without ISIN code, providing instead the CUSIP.

### *Only securities with ISIN code could be properly checked*

15. The ECB checked the received information and provided feedback to the FED. Without prejudging on further analysis being conducted by the FED, a number of results can be listed from the ECB side. In the first place information without ISIN could barely be matched with the CSDB data. While attempts were made to try to guess the ISIN code corresponding to the CUSIP only in a limited number of cases a tentative match was found.

### *CSDB contains information on 98% of the securities received from the FED*

16. Regarding the securities with ISIN, 98% were found in the CSDB. Those reported ISINs not found in the CSDB correspond in some cases to not formally valid ISINs codes. The other not found cases may also contain matured or not alive securities, instruments not classified as securities. Given that the CSDB performs quarterly exercises to include in the database any missing security detected by the ESCB in any of their statistical uses, the CSDB coverage of securities with ISIN issued by EU residents is close to 100%.

### *Sector, issuer country and issuer name provided to the FED*

17. Regarding the sectorisation for securities with ISIN, in almost all cases the CSDB sector could be provided to the FED. Discrepancies with the FED information were likely be due to the same reasons as described in the previous section and being analysed by the FED. In some cases a different issuer country was found in the CSDB and provided to the FED. Additionally issuer name was also provided.

### *Extension of the exercise is limited by contractual and legal constrains*

18. The provision of data from the ECB to the FED in the same terms as the current exercise can be repeated on an annual basis and could also potentially be extended to the Bank of Japan. However extension of the exercise to other attributes considered statistical confidential cannot be guaranteed and would need further investigations on the legal aspects. Furthermore, extension of the pilot exercise to other institutions is not possible as it is not allowed in the current CSDB contracts with commercial data providers.

### *Alternatives for the CSDB data output not available at present*

19. It is also noted that a segmentation of the CSDB data output according to the data provider is currently not possible. This segmentation could address some of the limitations in the data usage, e.g. excluding commercial data provision, but could result in quality problems as only the final CSDB data quality considering the full data provision is considered. Furthermore it would require further IT development which currently is not planned.

### SECTION 3: Pilot Exercise – Conclusion and follow up

Table 2 – Summary of pre-conditions for data exchange

<b>Pre-conditions for the use and exchange of micro-data</b>	
1	<i>Need for automatic procedures in the use of micro-data</i>
2	<i>Standardisation - use of ISIN for instruments</i>
3	<i>Standardisation - use of LEI for entities</i>
4	<i>Consistent application of international statistical standards</i>
5	<i>Consideration of legal and contractual limitations</i>

#### *Need for automatic procedures in the use of micro-data*

20. From the ECB side, the initial result from the exercise is that the sectorisation data provided by the FED as part of the pilot exercise could contribute to further enhancing the ESCB information on sectorisation but only if integrated in the automatic standard CSDB compounding process, where the information is compared with other sources and weighted according to the coverage, accuracy and relevance of the data of each provider. A manual analysis as performed in this exercise can only be performed as a one-off task and limited to a subset of securities, as it is very resource intensive.
21. *Standardisation - use of ISIN for instruments* In order to use the data on a regular basis standardisation issues should be first addressed as pre-conditions. The extension in the regular use of the ISIN is necessary. The ISIN is the only global unique identifier of securities. Only if the ISIN is generally used an automatic matching of data is possible and sufficient coverage ensured. Otherwise the possible impact of data exchange would be very limited.

#### *Standardisation - use of LEI for entities*

22. Also in a future systematic exchange of data the LEI should be included. The ISIN-LEI link is the best possible connection between a security and its issuer. Otherwise wrong classifications may arise if the security is not correctly allocated to its issuer and inconsistencies may appear if not all securities from the same issuer are allocated the same sector or country.

#### *Consistent application of international statistical standards*

23. Another important precondition for the regular use of the data is the consistency in the application of international statistical standards. The sectorisation prescribed in the SNA2008 and BPM6 should be consistently applied. For that purpose it may be very relevant to gain further information on specific institutions in other economies and agree at international level on their appropriate sector classification, e.g. trusts in the US.

#### *Consideration of legal and contractual limitations on the ECB CSDB data*

24. From the legal point of view, it will also be relevant to ensure that any information originally provided by the Fed, and potentially from other institutions, can be indistinguishably used in the CSDB output in the same conditions as with any other data provider (i.e. data usage limitations should be in line with the existing ones and not more restricted). Restrictions in the use of the data beyond those of other data providers would make impossible the integration of the data in the CSDB. Legal limitations in terms of contracts with data providers and statistical confidentiality should be carefully addressed before any data exchange.



*Address pre-conditions before further steps, repeat pilot exercise next year*

25. In view of the results of the exercise and the conclusions obtained the ECB would propose a follow up along the following lines:

- a. BOPCOM members could promote the use the ISIN and LEI in their respective jurisdictions. The ECB stands ready to provide further information and technical assistance on these issues;
- b. The BOPCOM members could further align in the application of international statistical standards;
- c. ECB and FED could repeat the exchange of data next year, with a narrower focus on those sectors and/or securities where the exchange of existing information could be more beneficial, e.g. Government or Financial Vehicle corporations. The results of the current exercise in terms of data availability, alignment with international statistical standards and other aspects would be taken into account. The Bank of Japan could also be invited to join the exercise depending on their possibilities to share security-by-security information.

**ANNEX – The Centralised Securities Database (CSDB)**

*The Centralised Securities Database is the tool for sectorisation of securities issuers*

26. The European System of Central Banks (ESCB) relies on the CSDB for the compilation of statistics on securities, including the sectorisation of non-resident issuers of securities. The CSDB is an ESCB database containing security-by-security reference and price data for more than 6.5 million active debt securities, equity shares and investment fund units issued worldwide.

*The CSDB has a global coverage of debt securities, shares and funds to serve ESCB statistical needs*

27. The CSDB covers securities issued by EU residents, securities likely to be held and transacted in by EU residents and securities denominated in euro, regardless of the residency of the issuer and holders. It also contains ratings provided by the four rating agencies recognised by the ECB. It is a single information technology infrastructure that contains reference data on securities (e.g. outstanding amounts, issue and maturity dates, type of security, coupon and dividend information, statistical classifications, etc.), issuers (identifiers, name, country of residence, economic sector, etc.) and prices (market, estimated or defaulted) as well as information on ratings (covering securities, issuance programmes, and all rated institutions independently of whether they are issuers of securities).

*The CSDB is a multisource system*

28. The CSDB is a multisource system. The CSDB receives data from several commercial providers and rating agencies as well as from most of the National Central Banks (NCBs) of the EU. Information from the different sources partially overlaps. Data from different sources is not always consistent and may contain errors. Therefore the CSDB uses algorithms to automatically select the best possible value for each attribute.

*Data quality of each data provider is monitored*

29. The data quality of each data provider, including both commercial data providers and NCBs is monitored on the basis of its coverage, accurateness and relevance. This monitoring serves as the basis for an optimal weighting of the different data providers in the automatic compounding process that results in the CSDB output.

*Data quality is maintained by the ESCB by complying with a legal act*

30. In addition, the quality of the CSDB data is maintained by the whole ESCB by complying with an ECB legal act on the matter. Data Quality Management (DQM) i.e. the direct correction of data contained in the CSDB is performed by NCBs and the ECB with a division of work according to the country of residency of the issuer. Data Source Management (DSM) is performed by the ECB addressing systematic relevant issues with the data providers.

*The CSDB only contains securities with an ISIN code*

31. The CSDB uses the International Securities Identification Number (ISIN) as the unique identifier for grouping on instruments information. Therefore, the CSDB only maintains reference information and prices for those securities with a valid International Securities Identification Number (ISIN), avoiding duplicities. On the entity identification, currently several identifiers are being used for grouping, but the

Legal Entity Identifier (LEI) is also loaded since December 2014 and the use of the LEI as the core entity identifier is foreseen for the future.

*The CSDB is a multipurpose system*

32. The CSDB is also a multipurpose system which provides reference and price information for the compilation of statistics on securities. The CSDB will also be used for the compilation of euro area and EU securities issues statistics in line with the G20 Data Gaps Initiative Recommendation 7. The CSDB is also a data provider for non-statistical uses within the ESCB. The use for different purposes permits to receive feedback from several angles further increasing the quality of the output.

*The CSDB is only accessible by the ESCB, with limited exceptions*

33. The CSDB is generally accessible only to the ESCB for two reasons. First, a large part of the CSDB content is subject to statistical confidentiality rules as it contains data collected through statistical reports by NCBs. Second, the data provided by commercial data providers is subject to contractual limitations and its use at granular level is strictly restricted to the ESCB. The main two exceptions to these rules are the consideration of issuer information, e.g. name, country and sector of the issuer as information available in the public domain and therefore not subject to statistical confidentiality rules and the current provision in the CSDB commercial contracts allowing an annual exchange of data with the US Federal Reserve and Bank of Japan.