



# Thirty-Second Meeting of the IMF Committee on Balance of Payments Statistics

Thimphu, Bhutan  
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BOPCOM—19/08  
For discussion

## **Advancing Work on the CPIS Centralized Database of Issuers' Sectors**

**(Report on the Outcome of the Proof of Concept and  
Way Forward)**



**Advancing Work on the CPIS Centralized Database of Issuers' Sectors<sup>1</sup>**  
**(Report on the Outcome of the Proof of Concept and Way Forward)**

*This paper reports on the results of the Proof of Concept (PoC) exercise conducted by STA with seventeen volunteer countries in early 2019. The PoC aimed to prove the usefulness of a centralized exchange of information on issuer sectors across countries with a view to expanding the coverage of the Coordinated Portfolio Investment Survey (CPIS) information in terms of geography and sector of issuers and holders. This information would better align a key statistical product (the CPIS) with wider Fund efforts to tailor policy advice on financial and market risks. The success of the exchange, the positive feedback gathered from the PoC participants through an ex-post survey and the analytical potential of the resulting data provide strong evidence on the usefulness of the exercise. The Committee's views are sought on the proposal to conduct the exchange on a regular (annual) basis with the support of a centralized database hosted by the Fund.*

## I. BACKGROUND

1. **The CPIS—as the only global survey of portfolio investment holdings—is widely used to examine the evolving nature of cross-border financial linkages.** Both during and after the recent global financial crisis, the CPIS gained prominence as a key data source for mapping out the channels through which shocks are potentially transmitted, enabling better tailored global and local policy responses. However, its usage in analyzing shocks has also underlined the need for enhancements in data granularity, notably to better identify the (nonresident) sectors that receive cross-border portfolio financing.
2. **The compilation of from-whom-to-whom portfolio investment stocks (i.e., broken down by geography and sector of holders and issuers) would be a useful extension of the Balance Sheet Approach as well as a first contribution to a future global flow of funds.<sup>2</sup>** It has the potential for a more strategic alignment of the CPIS to help countries examine the evolving nature of cross-border financial linkages and better tailor policy responses; it would facilitate more comprehensive measures of concentration and interconnectedness; and it would enable robust analysis of cross-border risks and vulnerabilities associated with portfolio investment.
3. **Given the difficulties to sectorize non-resident issuers, in previous discussions the IMF Committee on Balance of Payments Statistics (the Committee) concluded that a centralized exchange of data would greatly facilitate compiling this information.** The Committee considered that each country could more easily sectorize their own issuers and

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<sup>1</sup> Prepared by Antonio-Galicia Scotto and Sakai Ando, senior-economist and economist of the Balance of Payments Division, STA.

<sup>2</sup> See for instance Harutyunyan and Sánchez Muñoz 2018 ([https://www.bis.org/ifc/publ/ifcb49\\_11.pdf](https://www.bis.org/ifc/publ/ifcb49_11.pdf)).

exchange this information with holding countries, thus significantly enhancing the quality of the resulting data.<sup>3</sup>

4. **To achieve this common goal, conducting a centralized exchange of information with the support of a database hosted in STA would be a service provided by the IMF to its member countries.** To generate the same benefits without the intermediation of the IMF, each country would need to organize bilateral exchanges with every counterpart (issuer) economy. Conversely, the results of a regular (annual) centralized exchange would permit reporters to decompose their portfolio assets by (nonresident) issuer sector. The centralized database would not only be conducive to expanding the number of CPIS reporters that already provide this information, but also to improving its quality and coverage.

5. **Against this background, STA conducted a Proof of Concept (PoC) exercise with seventeen volunteer countries in early 2019.** The objective of the PoC was to identify the challenges of exchanging this information as well as the potential usefulness of the resulting data.

6. **The document is organized in five sections.** Following this introduction, Section II describes the PoC exercise and its key results; Section III presents the results of a survey conducted among PoC participants after the exercise; Section IV presents two case studies carried out with the from-whom-to-whom data collected at the end of the exercise; and Section V concludes.

## II. THE POC EXERCISE AND ITS KEY RESULTS

7. **The PoC was undertaken between November 2018 and April 2019.** A heterogeneous sample of seventeen countries participated in the exercise.<sup>4</sup> Participating countries accounted for 41 percent of the total portfolio investment assets recorded in the CPIS for the reference year 2017.

8. **The data exchange between the participants and STA was undertaken in several steps.**<sup>5</sup> In the first submission, each participant sent to STA the information on securities held by residents and issued by the rest of the participants as at end-December 2017. Securities

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<sup>3</sup> The work undertaken in previous meetings (including the results of a pilot conducted by the European Central Bank and the US Federal Reserve in 2017) is well documented in three preceding BOPCOM papers: BOPCOM Papers 16/4, 17/03, and 18/08 available at: <https://www.imf.org/external/bopage/bopindex.htm>

<sup>4</sup> The participants were: Albania, Austria, Bulgaria, Colombia, Costa Rica, Denmark, France, Germany, Israel, Italy, Malaysia, Norway, Portugal, Romania, Russia, Slovak Republic, and the United States.

<sup>5</sup> On the operational side, the platform used for the data exchange/storage was BOX, communications were through e-mail and the information was shared through CSV files using a secure platform.

corresponding to small holdings/positions were not included in the exchange: the submitted securities constituted 90 percent of the total positions vis-à-vis each counterpart country.<sup>6 7</sup>

9. **Following the first submission, STA combined all the submitted files, removed duplicates,<sup>8</sup> and classified the data into issuing countries.** STA sent a single data file to each participant containing only securities issued by residents of the reporting economy.

10. **Participants were given one month and a half to review the data and sectorize each security's issuer.** Specifically, participants filled the cells under the variable name "SECTOR" using the following classification (in line with *BPM6* and the CPIS) (Box 1).

### Box 1. Sector Classifications

- 1: Central Bank
- 2: Deposit-taking corporations except the Central Bank
- 3: Other Financial Corporations,
  - Of which:
    - 3a: Insurance Corporations and Pension Funds
    - 3b: Money Market Funds
    - 3c: Other
- 4: General Government
- 5: Nonfinancial corporations
  - Of which:
    - 5a: Nonfinancial corporations
    - 5b: Households
    - 5c: NPISHs

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<sup>6</sup> Note that this is 90% of the total positions, not 90% of the number of securities.

<sup>7</sup> STA asked participants to submit a simple csv file containing security-by-security (s-b-s) information in rows and the following variables in columns:

- a. ISIN (12-digit security identification code)
- b. ISSUER\_COUNTRY (ISO 3166-1 alpha-2 country code)
- c. DERIVED\_ISIN (only for securities with a different code —e.g., a CUSIP— from which an ISIN could be derived)

<sup>8</sup> When multiple countries reported the same ISIN, the ISIN was only transmitted once in the file provided to the issuing country.

11. **In the second submission, participants submitted to STA the file with the sector information for each ISIN code.** STA received all files and combined the sectorized securities' information into a single PoC database, making it available to all participants. This closes the cycle of the production of the database.

12. **To prove the analytical potential of the resulting data, participants used the PoC database to provide new CPIS data** with a revised sectorization on portfolio positions as of end-December 2017 vis-à-vis the other participants in the PoC broken down by counterpart country, issuer and holder sector, and five instrument categories.

13. **The implementation of the PoC was very successful.** The number of total ISIN codes provided in the first round by the seventeen participants was 130,000. Following the first submission, STA "cleaned" the information mainly avoiding duplicates and fixing errors by returning 52,000 ISIN codes to participants. The PoC centralized database ended up storing high quality information of sectorized ISIN codes in the amount of 44,000. The attrition rate (i.e., the proportion of securities for which an issuer sector could not be assigned) was 15.6 percent, meaning 84.4 percent of successful sectorization.

### III. OUTCOME OF THE EX-POST SURVEY WITH POC PARTICIPANTS

14. **At the end of the PoC, STA conducted a survey among participants to gauge the merits and costs of the exchange.** The key survey results indicated that (i) the average resource cost for national compilers to participate in the POC was 10.7 staff hours; (ii) improvements in the sectorization codes by peer exchange averaged 8.2 percent in the number of ISIN codes and was much higher for the group of emerging economies; and (iii) only three participants expressed some doubts about the possibility to participate in future exchanges.

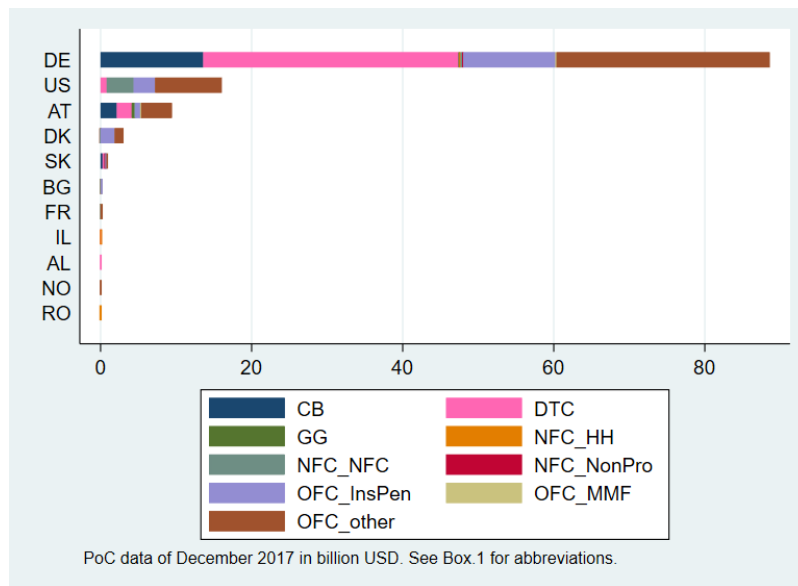
15. **Four countries that did not have information about issuer sectors in their national securities database benefited the most from the PoC exercise.** Other large economies also reported significant benefits with considerable improvements in their sectorization codes. Out of the 17 countries, 12 mentioned the need to consider legal issues to share ISIN codes and sectors. In detailed comments within the survey, 13 participants saw strong merits in the exchange of ISIN codes, and two only expressed merits in assisting other countries (although they would also indirectly benefit via improving their CPIS mirror liabilities).

#### IV. TWO APPLICATIONS BASED ON THE DATA COLLECTED DURING THE POC EXERCISE

16. For the first time, the PoC exercise provided STA with from-whom-to-whom data broken down by sector of issuers and holders for participating countries.<sup>9</sup> This annex presents two applications of the data to showcase how they can be used for analysis.

17. The first application identifies financial vulnerabilities at the sector level. The following chart shows cross-border holdings of Italian government bonds by holding country and sector. Being Germany is the largest holder, the new data reveals that German Deposit-Taking Corporations and Other Financial Corporations are the two sectors that are most exposed to Italian government bonds. Conversely, among Danish investors Insurance Corporations and Pension Funds have the largest exposure to such bonds.

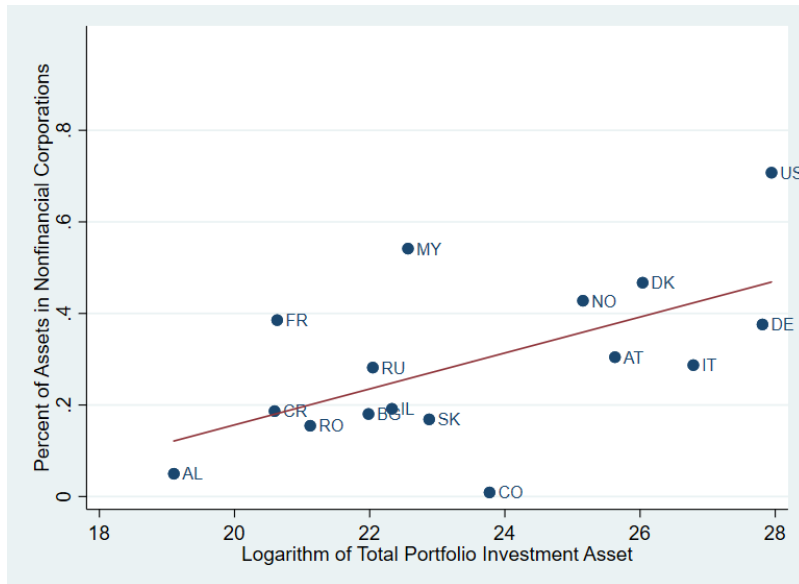
**Figure 1. Who Holds Italian Government Bonds?**



18. The second application uncovers the structure of global financial flows in terms of risk appetite and portfolio strategy. The following charts suggest that investors in countries with large portfolio holdings tend to invest directly in securities issued by presumably risky Nonfinancial Corporations, while investors in countries with smaller portfolios tend to invest less in risky sectors directly. Thus, if investors in countries with smaller portfolios invest in risky sectors, they are probably made indirectly through financial intermediaries of countries with larger portfolio holdings. To be concrete, the following chart suggests that the larger the total portfolio holdings are, the larger the percentage of portfolio holdings directly invested into Nonfinancial Corporations equity and debt.

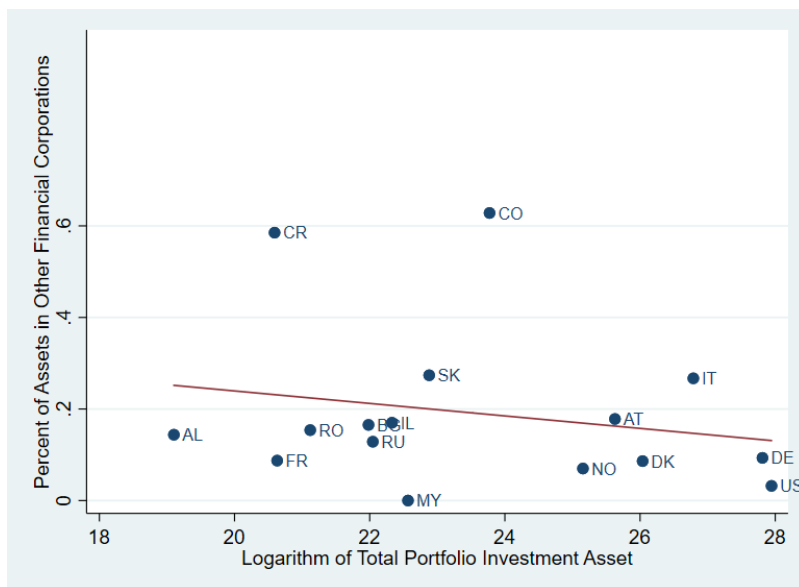
<sup>9</sup> Portugal did not provide holding information, although it participated in all other rounds of the exercise including the provision of sectors for the Portuguese issuers.

**Figure 2. Economies with Larger PI Holdings Tend to Invest More in Nonfinancial Corporations**



19. In contrast, the larger the total portfolio holdings are, the smaller the percentage of the investment directly going to securities issued by Other Financial Corporations (including mutual funds' and hedge funds' units).

**Figure 3. Economies with Smaller PI Holdings Tend to Invest More in Other Financial Corporations**

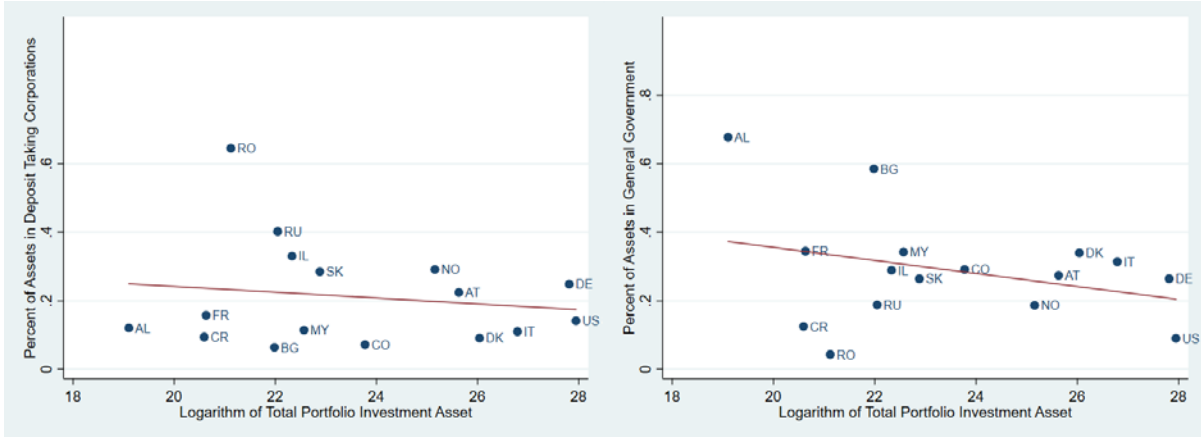


20. One explanation could be that economies with smaller portfolio holdings may tend to accumulate less expertise in asset management so that they may more frequently resort to

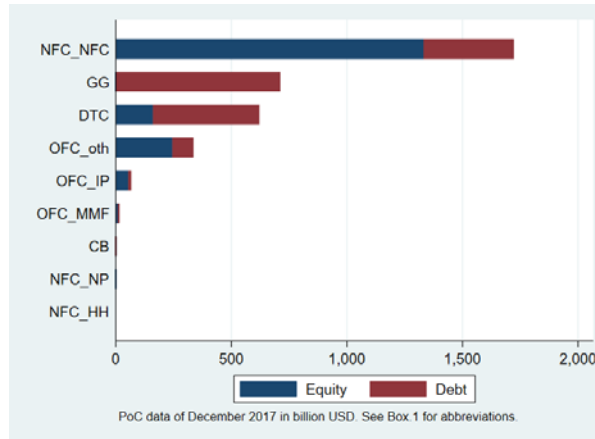


outsourcing portfolio allocation and investment decisions to foreign intermediaries (in economies with larger portfolios). Consistent with such view, smaller asset economies tend to invest more in safer sectors such as General Government and Deposit-Taking Corporations that mainly issue debt rather than (financial and non-financial) corporations' equity.

**Figure 4. Economies with Smaller PI Holdings Tend to Invest in Less Riskier Sectors**



**Figure 5. Issuance by Sector and Instrument**



## V. CONCLUSIONS AND WAY FORWARD

21. **The successful results of the PoC exercise provide a viable case for conducting a regular exchange of data supported by a centralized database hosted by the Fund.** Setting up a CPIS database of issuers' sectors would permit reporters to break down their portfolio assets by (non-resident) issuer sector and eventually provide users with from-whom-to-whom CPIS positions by economy and sector of holder and issuer.
22. **With a view to mainstreaming this initiative at global level, STA is seeking the Committee's endorsement for conducting a regular exchange of information on an annual basis.** The exchange could be initiated in March 2020 and be completed by June 2020. The centralized database would be made available to all CPIS reporters to facilitate its use for the collection of CPIS data corresponding to end-December 2019 to be reported to STA in September 2020.
23. **The exchange system intends to be fully automated, thus reducing cost to participants.** STA is working on a project to allow the exchanges to take place through the Fund's Integrated Collection System (ICS), which is the commonly used secure communication protocol between the Fund and its member countries. If the infrastructure is fully functional by mid-2020, it could already be used for the next exchange.

### *Questions for the Committee:*

- 1. What are the Committee's views on the results of the PoC exercise and the usefulness of this initiative?*
- 2. Does the Committee support conducting a regular exchange of data supported by a centralized database hosted by the Fund prior to the CPIS collection of end-year data?*
- 3. Would Committee members consider participating in the first full exchange of information scheduled to be initiated in March 2020?*