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Policy Needs for Reconciling Cross-border Flows and Stocks, and Currency Composition

Prepared by the Statistics Department

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Policy Needs for Reconciling Cross-border Flows and Stocks, and Currency Composition[1]

At the 2018 Meeting of the IMF Balance of Payments Statistics Committee, the Committee acknowledged the policy relevance of data reconciling cross-border flows (balance of payments) and stocks (international investment position, IIP), as well as the currency composition of the IIP for making more informed assessments of external sector vulnerabilities. With a view to examining the feasibility of compiling these datasets, this paper takes stock of the recent developments and challenges in reconciling balance of payments and IIP, and the availability of IIP by currency composition. For its External Sector Report (ESR), the IMF has undertaken, in the past two years, an ad-hoc survey of 52 economies to assess the availability of integrated international accounts and currency composition of detailed cross-border positions that would support multilaterally-consistent assessments of external positions. The first part of this paper examines the survey results with a view to assessing the feasibility of data compilation. The second part discusses the IMF's initiative to compile and disseminate currency composition data introduced in the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6) *and recommended by the second phase of the G20 Data Gaps Initiative. The Committee's views are sought on the challenges to compile integrated international accounts and IIP by currency composition, and on how to address them.*

I. INTRODUCTION

1. Recent IMF analytical work on the sources of vulnerability and external shocks as well as a recent comprehensive review of the debt sustainability analysis (DSA) guidance[2] has reinforced the call for more sound, granular, and consistent cross-border position data that are fully integrated into a set of external macroeconomic accounts. Analysis of risks related to movements among major currencies, including possible sectoral imbalances, and balance sheet risks is an intrinsic part of the continuous effort to develop a deeper understanding of the implications of growing financial integration. The need to better inform this analysis is recognized by the G-20 Finance Ministers and Central Bank Governors, with the measures to address data gaps involving foreign currency exposures included in the current phase of the Data Gaps Initiative launched by the IMF and the Financial Stability Board.

2. As mentioned in the annual External Sector Report (ESR) 2019,[3] an integral part of IMF's surveillance and a key instrument for monitoring the functioning of the international monetary system, the cross-border financial positions (sum of net creditor and net debtor

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[2] https://www.imf.org/external/pubs/ft/dsa/

[3] https://www.imf.org/en/Publications/ESR/Issues/2019/07/03/2019-external-sector-report

positions), which are at their historical peak of 40 percent of global GDP in 2018, are at the center of analysis of the configurations and trends of external imbalances. Moreover, assessment of risks associated with sizable movements among major currencies and stock market price volatilities presents growing challenge for economic forecasting and analysis. Implication of currency mismatches coupled with increasing interconnectedness in developments of economies' external positions is increasingly discussed in the context of the IMF Article IV consultations, in line with the IMF's Integrated Surveillance Decision.[4]

3. In its effort to further advance the work on strengthening analysis of global vulnerabilities, the IMF Statistics Department (STA) in cooperation with the IMF Research Department conducted a survey of 52 economies representing over 90 percent of global GDP during October/November 2018. The survey was seeking calibration of the difference between changes in cross-border positions and cross-border transactions into exchange rate, price, and other changes (components of the Other Changes in the Financial Assets and Liabilities Account), as well as collecting data on the currency composition of the main components of the international investment position (IIP). Metadata on current compilation practices were requested to form a better understanding of practical issues related to the foreseen incorporation of the requested data into the regular IMF data collection on a more systematic, comprehensive, and continuous basis.

4. The main findings from the analysis of the survey results are presented in the following sections. Section II provides a summary of findings of the ESR survey. Sections III and IV present the availability of data on stock-flow reconciliation and currency composition of IIP components, respectively. Section IV presents findings on the availability of currency composition data for specific IIP components. Analysis of these sections was informed by reported metadata on the current compilation practices. Summaries of data availability for each of the 52 economies included in the survey are provided in the Annexes 1 and 2. Section V discusses the status of the collection of currency composition data, as requested in the *Balance of Payments and International Investment Position Manual, sixth edition* (*BPM6*) and the second phase of the DGI; finally, Section VI proposes for Committee's discussion a way forward on the reporting of integrated international accounts data to STA.

II. SUMMARY OF FINDINGS

5. Overall, the slow pace of implementation of the full set of integrated international accounts in countries and the challenges to compile the detailed currency composition of external positions data may either reflect low national user demand or lack of information sources and/or resources.

[4] See https://www.imf.org/external/np/exr/facts/isd.htm.

6. The push for global implementation of the compilation framework that produces the full set of integrated international accounts is likely to be challenging, with only about 20 percent of the surveyed economies (i.e., 10 economies)[5] indicating in their metadata that their compilation systems would support the production of a complete set of integrated international accounts with the full reconciliation between stocks and flows. These economies predominantly include advanced economies of the European Union. Although an additional 42 percent of the respondents (i.e., 22 economies) presented stock-flow reconciliation and metadata details in a varying degree of completeness to the ESR survey, only about half of them indicated that such (however incomplete) reconciliation would comprise an intrinsic part of their routine data compilation process.

7. With regards to currency composition, the ESR survey revealed a mixture of compilation and dissemination practices, with 26 economies reporting an ability of their compilation system to collect currency composition data for all or selected financial instruments. However, several economies were not ready to report these data to the ESR survey, or the data were reported as confidential. In addition, three respondents indicated that in the absence of source data, they had applied estimation techniques to report data in the requested detail. As of September 2019, 13 economies report currency composition data to STA for regular re-dissemination through the IMF's website.

III. Status of Data Availability on Stock-Flow Reconciliation

8. Annex 1 provides an overview of the availability of data that reconcile end-period external positions with transactions, other volume changes, and revaluation (price and exchange rate changes). The data were requested separately for assets and liabilities by the balance of payments aggregated functional categories and subcategories, notably (i) direct investment equity and investment fund shares; (ii) direct investment debt instruments; (iii) portfolio investment equity and investment fund shares; (iv) portfolio investment debt instruments; (v) financial derivatives; (vi) other investment; and (vii) reserve assets. In terms of sectorization, metadata questions were seeking information for (i) central bank; (ii) deposit taking corporations, except the central bank; (iii) general government; and (iv) other sectors.[6] The survey response rate was 62 percent.[7]

9. Out of the 32 economies that reported the data on revaluations and other changes fully or partially, two-thirds have confirmed in the survey metadata that their data came from the regular collection, with 10 economies indicating that design of their compilation program supports a full scope of the integrated set of international accounts (all sectors and all

[5] Belgium, Chile, Czech Republic, Denmark, Germany, Hungary, Italy, Malaysia, Netherlands, and Spain.

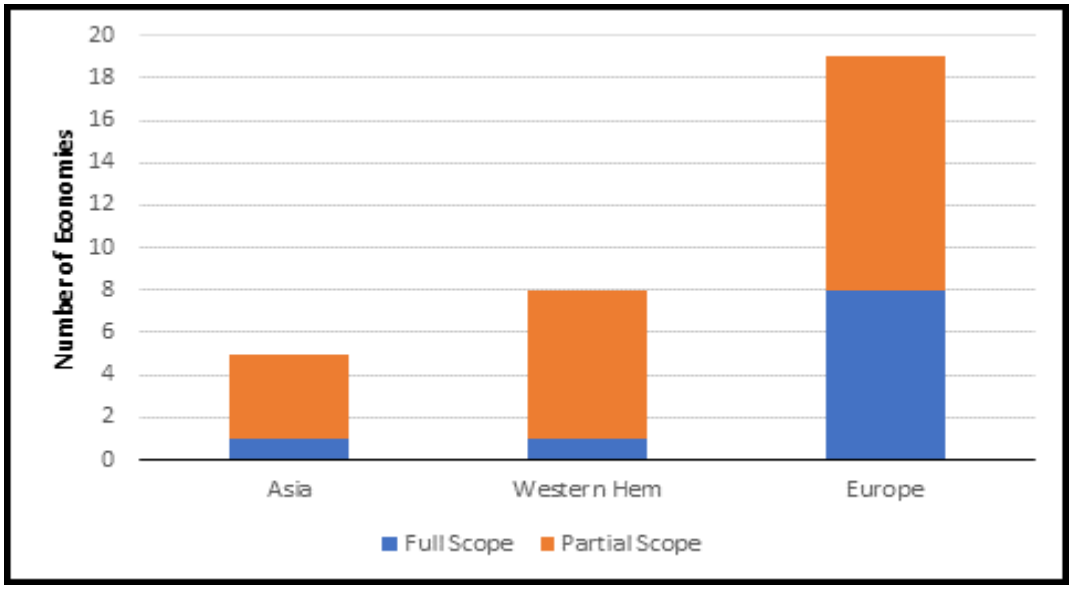
[6] Other financial corporations, nonfinancial corporations, households, and NPISHs.

[7] The response rate does not count economies that reported data on positions and transactions only with no details on revaluation and other volume changes.

functional categories/financial instruments). The remaining economies either stated their ability to achieve partial scope by collecting granular data for selected sectors and selected instruments or provided no metadata details to assess the scope of the reported data. This pertains equally to both financial assets and financial liabilities.

10. In terms of geographical distribution, the full scope of integrated international accounts is supported by compilation programs in (i) eight European economies (seven advanced economies (AE) and one from the group of emerging and developing economies (ED)); (ii) one ED economy from the Western Hemisphere; and (iii) one ED economy from Asia. The partial scope of integrated international accounts is supported by a compilation program in 22 economies, of which 11 are European economies (nine AE and two ED), seven are Western Hemisphere economies (two AE and five ED), and four are Asian economies (two AE and two ED). Box 1 provides the status of European Central Banks's data collection on integrated international accounts for the Euro Area. Figure 1 provides a summary of the data availability on integrated international accounts by geographical regions (for economies with full and partial scope of compilation systems).

Figure 1. Data Availability on Integrated International Accounts



Source: ESR Survey
Full Scope: indicates availability of data on all functional categories/instruments from a regular compilation system; Partial Scope: indicates data availability for selected sectors/instruments from a regular compilation system or absence of metadata details

11. Among the reporters of a partial scope, the details are mixed with varying degree of deficiencies in instrument and sector coverage. Despite the emphasis on stock-flow reconciliation in assessing external debt sustainability, coverage and level of detail seem to be similar for both financial assets and financial liabilities.

Box 1. Data on the Integrated International Accounts for the Euro Area

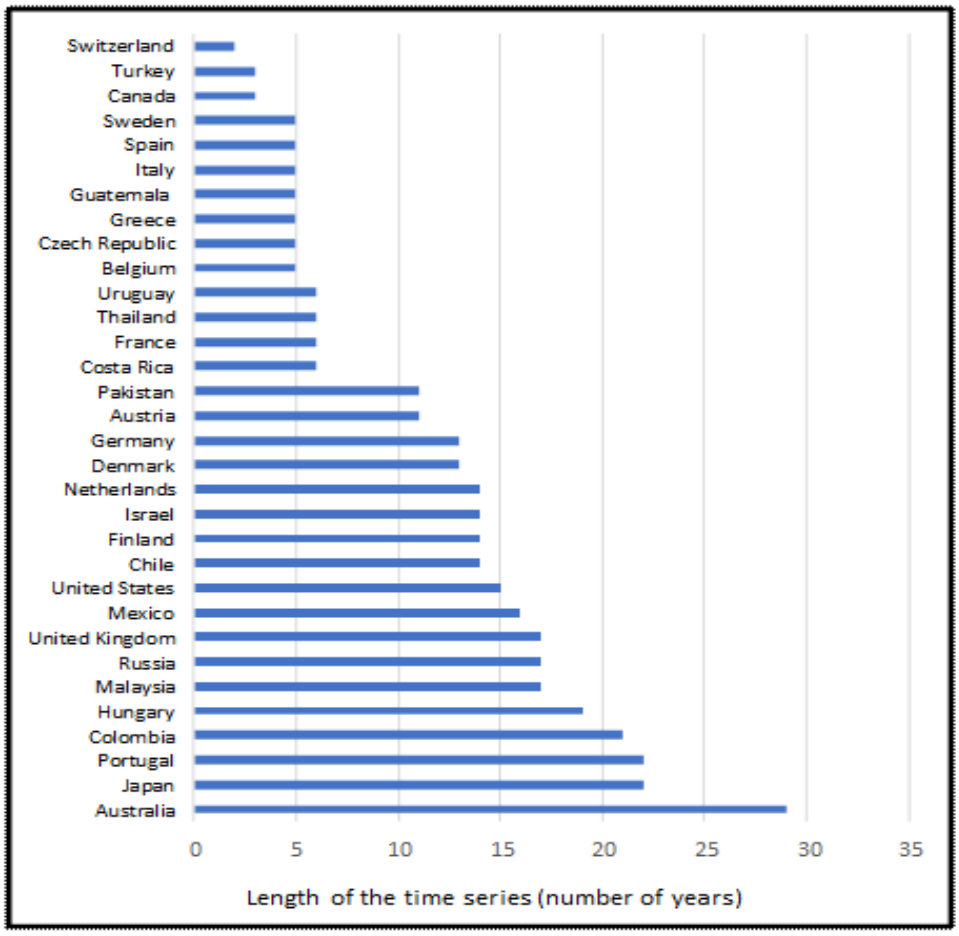
Following the updated external sector statistics reporting guidelines of the European Central Bank (see https://www.ecb.europa.eu/ecb/legal/pdf/l_06520120303en00010044.pdf)—which are in line with the *BPM6*—Euro-area (EA) member states report detailed quarterly data on other flows (revaluations and other changes in volume) to the ECB. While the ESR survey data collection was carried out at the aggregate level of the various functional categories, ECB's template for reporting the other flows data covers the financial account components presented in Appendix 9 of *BPM6*. EA member states report quarterly data to the ECB by the eightieth calendar day following the end of the quarter. These data are disseminated through the ECB's Statistics Bulletin (see http://sdw.ecb.europa.eu/reports.do?node=10000065) and quarterly press releases.

12. For financial assets, most partial reporters indicate a collection system for reporting stock-flow reconciliation covering traditional balance-sheet components of the banking system and the monetary authority, such as reserve assets and all financial instruments reported by money and banking statistics. For the general government sector or other sectors, few economies focus on compiling details for selected functional categories, such as for direct investment debt or other investment for general government.

13. For liabilities, the picture is similar, although four economies collect additional details on other investment for general government and two for portfolio investment for general government.

14. The length of the time-series of fully or partially reconciled stock-flow data is quite heterogeneous across surveyed economies–starting from 1996 (Portugal) to 2016 (Switzerland). However, sometimes metadata are not clear enough to know when the estimates at an aggregate level have been replaced by detailed source data. Figure 2 shows the length of the time-series (in number of years prior to 2018) for all those economies that reported integrated international accounts—partially or fully. For example, in the case of Australia, the data are available for 29 years (i.e., from 1989 to 2017).

Figure 2. Data Availability on Integrated International Accounts (length of the time series, in years)



Source: ESR Survey

15. The survey results can be obscured by confidentiality concerns, when country respondents, although compiling the detailed revaluation data, are reluctant to provide the price, exchange rate, and other changes in volume data. Some countries provided together price changes and other changes in volume for confidentiality reasons, thus affecting the overall decomposition. Moreover, four economies indicated in their metadata that partial revaluation data are included in production, but they did not provide those data for the ESR survey.

IV. Status of Data Availability on Currency Composition of IIP Components

16. Annex 2 provides an overview of the availability of currency composition data. The data were requested separately for assets and liabilities by the balance of payments aggregated functional categories mentioned in paragraph 8 above with the following options for reporting currency composition: US Dollar, Euro, Yen, British Pound, Renminbi, national currency (if different from listed above), and other currencies. In terms of sectorization,

metadata questions covered information on (i) central bank; (ii) deposit taking corporations, except the central bank; (iii) general government; and (iv) other sectors.[8] Respondents were also requested to indicate in their metadata whether they compile the detailed currency composition data for respective financial instruments, or only the split into foreign/national currency.

17. Out of the 26 economies that reported currency composition data, ten economies indicated that their compilation system covers detailed currency composition data for all functional categories/sectors; and 16 economies reported partial data covering selected functional categories/sectors only (some respondents stated that they have full details of debt only and provided no details of asset categories). In terms of geographical distribution, the currency composition data are covered by the regular compilation system in (i) 16 European economies (12 AE and four ED); (ii) four economies from the Western Hemisphere (one AE and three ED); and (iii) six economies from Asia (two AE and four ED). Figure 3 provides a summary of the data availability on currency composition of IIP components by geographical regions (for economies with full and partial scope of compilation systems).

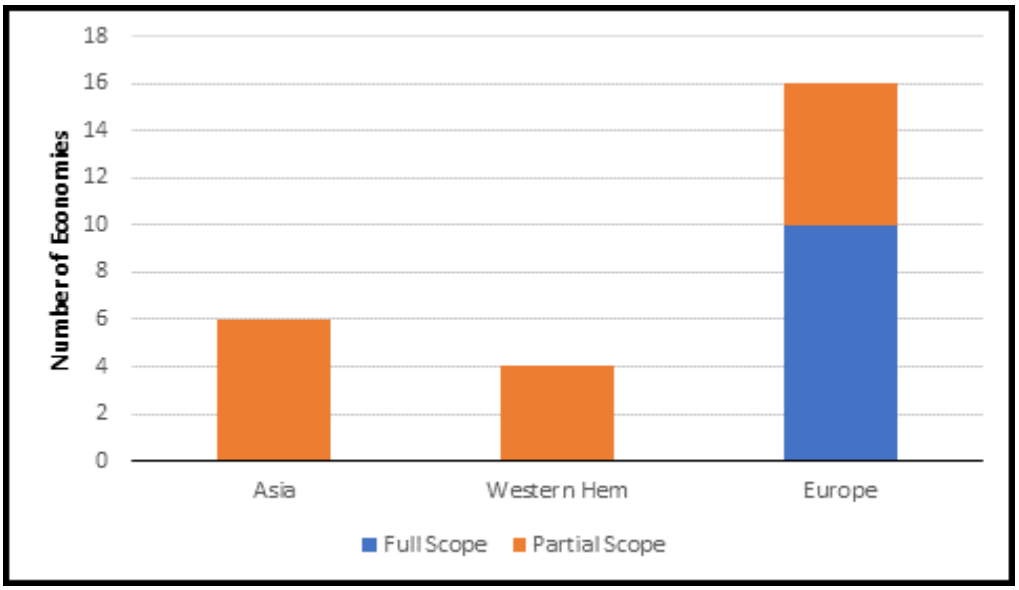
18. For partial reporters, the instrument/sector coverage is comparable across around ten economies. The most readily available currency composition data are for portfolio investment assets and liabilities (equity and debt)[9] and for reserve assets.[10] In general, currency breakdowns are the least available for financial instruments of the government sector and for other investment of deposit taking corporations and other sectors.

[8] Other financial corporations, nonfinancial corporations, households, and NPISHs.

[9] Most of these economies report CPIS Table 2 “Currency Breakdown of Portfolio Investment assets”.

[10] Based on the publicly available information on the list of COFER reporters, economies under the partial scope mostly report COFER data.

Figure 3. Data Availability on Currency Composition of IIP Components



Source: ESR Survey
Full Scope: indicates availability of detailed currency composition data for all functional categories/sectors from a regular compilation system; Partial Scope: indicates data availability for selected sectors/instruments (sometimes only covering debt) from a regular compilation system or absence of metadata details.

19. Confidentiality concerns are also an obstacle for compiling currency composition data, with several economies reporting data as classified. Six economies, while indicating that their regular compilation system fully or partially covers currency composition data, were not ready to provide those data for the ESR survey.

V. Currency Composition Data Requested in *BPM6* and the Second Phase of the DGI

20. *BPM6* introduced enhancements to the IIP, including compilation of currency composition data. Appendix 9 of the *BPM6* presents tables on the currency composition for debt claims and liabilities as well as notional values of financial derivatives.

21. The Second Phase of the G20 Data Gap Initiative (DGI-2) also included a recommendation for IIP enhancements (Recommendation II.10).[11] The IMF's Statistics Department (STA) has been closely monitoring the compilation status in G20 economies and reporting the developments to G20 economies through the Secretariat of the DGI-2.

22. However, the compilation of currency composition data remains challenging for many countries. As of September 2019, only 13 countries reported currency composition data to STA for re-dissemination at the IMF's website. In a survey STA conducted in 2016,

[11] Namely, compilation of quarterly IIP according to *BPM6*, separate identification of other financial corporations, and compilation of currency composition data.

countries had indicated that lack of source data, resource limitations, respondent overburden, and confidentiality concerns were main obstacles for the compilation.[12]

23. To assist countries, STA introduced a session on IIP enhancements in its training course on Cross-Border Position Statistics and has been providing technical assistance on the compilation of the data. STA has also been approaching economies to facilitate reporting of currency composition data. In 2018, STA approached 12 countries that had provided currency composition information for the IMF's ESR, of which five countries already reported the data or have plans to report them in the near future.[13]

24. STA will continue to facilitate the compilation of currency composition data. As some countries already compile or plan to compile these data, sharing these experiences may provide useful information for other countries to start planning the compilation. STA will also continue to provide training and technical assistance on IIP enhancements. In September 2019, STA launched a survey to G20 and non-G20 Financial Stability Board member economies to identify the types of assistance they require and to gauge interest in a seminar to assist countries in compiling the data. Depending on the response, STA will initiate work for delivering the seminar in 2020.

VI. The Way Forward For Reporting Integrated International Accounts and Currency composition of IIP components

25. A step-by-step approach could be considered for implementing the regular dissemination of data on the Other Changes in the Financial Assets and Liabilities Account (see Table 9.1 of *BPM6*) so as to facilitate the dissemination of an integrated set of international accounts. Given that only a limited number of economies are covering these data as part of their regular compilation system, this approach could be based on introducing a minimum set of functional categories/instruments (i.e., those for which data are available for most of the economies that responded to the ESR survey). Further, the approach could be flexible to encourage countries to disseminate stock-flow reconciliation data, based on the data available as part of their current compilation system. The number of data categories/details may be amended or increased after an initial experimental period of three/four years, based on the experience of economies and by exploring alternative data collection sources and compilation methods, and may inform the design of supplemental tables in the context of the *BPM6* update which aims to give more emphasis to stock-flow reconciliation issues. In the short-term, the following set of functional categories/instruments (Table1) are proposed for voluntary dissemination of the Other Changes in the Financial

[12] For details of the survey results, please refer to the BOPCOM paper "Implementation of the IIP enhancements—Survey Results (BOPCOM 16/9)."

[13] In December 2017, STA started re-disseminating reported currency composition data on its website. In June 2019, STA enhanced the website by introducing pre-defined presentations for individual countries as well as individual indicators.

Assets and Liabilities Account, beginning from the data for 2019. Given the number of data collection initiatives currently in the pipeline, STA is not considering expanding its reporting requirements at this stage. However, Table 1 could be used as a basis for guiding national dissemination, and STA may consider a web portal as a getaway to redisseminate the URL links on which the data are available.

Table 1. Minimum Set of Functional Categories/Instruments on Integrated International Accounts

Assets
Portfolio investment
a) Equity and Investment fund shares
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)
b) Debt instruments
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)
Other investment (for the available instruments only)
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)
Reserve assets
Liabilities
Portfolio investment
a) Equity and Investment fund shares
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)
b) Debt instruments
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)
Other investment (for the available instruments only)
Central bank
Deposit taking corporations, except the central bank
General Government
Other sectors (optional)

26. A successful implementation of the above approach may require focused technical assistance/training by STA to enhance national capacities, after assessing the country's needs through a survey.

27. A similar step-by-step approach could be considered for the compilation of currency composition of the IIP. Economies could start compiling the data for limited sectors (e.g., central bank and deposit-taking corporations) and financial instruments (e.g., portfolio investment and deposit liabilities), for which source data are available.[14] Further, the tables for notional values of financial derivatives (see Table A9-I-1b and 2b of *BPM6*) are more challenging to compile and could be compiled at a later stage.

28. Compilers could also consider introducing various estimation techniques to compile the data. For example, in the case of direct investment (at least for equity) liabilities could be assumed as mostly denominated in domestic currency while assets could be assumed to be denominated in the currency of the recipient economy.[15] The currency composition information from the International Banking Statistics of the Bank of International Settlement could also be used to estimate the currency composition of external positions of other entities that conduct similar economic activities (e.g., part of other financial corporations).

29. STA acknowledges that partial compilation and use of estimates would be a first step towards compiling more comprehensive and high-quality data. Data gaps and estimation techniques should be clearly explained in the metadata.

Questions for the Committee:

- *What are the Committee's views on the challenges to compile integrated international accounts and IIP by currency composition, and how to address them?*

- *Does the Committee agree on the way forward proposed, including the gradual compilation of integrated international accounts and currency composition data and the proposed minimum set of functional categories/instruments on the integrated international accounts?*

[14] The rest of sectors and financial instruments, for which source data are not available, could be recorded as unallocated. Table A9-I-1a and 2a of *BPM6* as well as the report form to STA include a line for unallocated data.

[15] If compilers have some information on direct investment assets not denominated in the currency of the recipient economy but in convertible foreign currency (e.g., US dollars), such information could be used to adjust the estimation.

Annex 1. Availability of Stock-Flow Reconciliation Data [16]

	Economy	Assets					Labilities					Series start date
		Revaluation, total	Price changes	Exchange rate changes	Other volume changes	Part of regular collection	Revaluation, total	Price changes	Exchange rate changes	Other volume changes	Part of regular collection	
1.	Argentina	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
2.	Australia	All instruments	All instruments	All instruments	All instruments	n.a.	All instruments	All instruments	All instruments	All instruments	n.a	1989
3.	Austria	All instruments, except FD	All instruments, except FD	All instruments, except FD	All instruments, except FD	n.a.	All instruments, except FD	All instruments, except FD	All instruments, except FD	All instruments, except FD	n.a	2007
4.	Belgium	All instruments	All instruments	All instruments	All instruments	For all sectors	All instruments	All instruments	All instruments	All instruments	For all sectors	2013
5.	Brazil	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
6.	Canada	Total DI, PIE, PID, OI, RA, OI	n.a.	Total DI, PIE, PID, OI, RA, OI	Total DI, PIE, PID, RA, OI[17]	For all sectors	Total DI, PIE, PID, OI	n.a.	Total DI, PIE, PID, OI	Total DI, PIE, PID, RA, OI[2]	For all sectors	2015
7.	Chile	All instruments	All instruments	All instruments	All instruments	For all sectors	All instruments	All instruments	All instruments	All instruments	For all sectors	2004
8.	China	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
9.	Colombia	All instruments,	All instruments	All instruments	All instruments	RA, FD for DTC and OS	All instruments	All instruments	All instruments	All instruments	For selected sectors and instruments	1997
10.	Costa Rica	All instruments,	All instruments	All instruments	All instruments	For CB and OS, selected instruments	All instruments,	All instruments	All instruments	All instruments	For OS, selected instruments	2012
11.	Czech Republic	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2013
12.	Denmark	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2005
13.	Egypt	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
14.	Finland	All instruments,	All instruments	All instruments	All instruments	Exchange rate changes – for	All instruments,	All instruments	All instruments	All instruments	Exchange rate changes – for, GGPI,	2004

[16] DI – direct investment (E – equity, D – debt instruments), PI – portfolio investment (E – equity, D – debt instruments), OI – other investment, RA – Reserve assets, FD – financial derivatives, CB – central bank, DTC – deposit taking corporations, GG – general Government, OS – other sectors

[17] Residual after exchange rate changes.

						RA; price changes – for all sectors					CB OI, price changes – for all sectors	
15.	France	All instruments,	All instruments	All instruments	All instruments	All sectors, selected instruments	All instruments,	All instruments	All instruments	All instruments	All sectors, selected instruments	2012
16.	Germany	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2005
17.	Greece	All instruments	All instruments	n.a. except for RA	n.a.	n.a.	All instruments,	All instruments	n.a	n.a	n.a.	2013
18.	Guatemala	PID, RA, , OI	RA	PID, RA, OI	Total assets,	Exchange rate changes – all sectors price changes – for RA	PID, RA, DIE, DID, OI	PID, DIE	PID, DIE, DID, OI	Total liabilities	All sectors, selected instruments	2013
19.	Hong Kong	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
20.	Hungary	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	1999
21.	India	n.a.	n.a.	n.a.	n.a.	CB, DTC, OS for PIE, PID RA, OI; GG for OI	n.a.	n.a.	n.a.	n.a.	DTC, OS for PIE, PID, GG for PID, all sectors for OI	
22.	Indonesia					For RA only						
23.	Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
24.	Israel	All instruments	All instruments	All instruments	All instruments	n.a.	All instruments	All instruments	All instruments	All instruments	n.a.	2004
25.	Italy	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2013
26.	Japan	All instruments,	n.a.	All instruments	All instruments	n.a.	All instruments,	n.a.	All instruments	All instruments	n.a.	1996
27.	Korea	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
28.	Malaysia	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2001
29.	Mexico	All instruments,	DIE, FD, RA	DIE, PIE, PID, RA	DID, PIE, PID, FD	CB for RA, DTC and OS for FD	All instruments, except FD	DIE, PIE	DIE, PID	DIE, PIE, PID, OI	OS for PIE, PID, FD, OI; DTC and GG for PID, OI	2002
30.	Morocco	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
31.	Netherlands	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2004
32.	New Zealand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
33.	Norway	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
34.	Pakistan	All instruments,	All instruments	All instruments	All instruments	DTC, CB, OS	All instruments,	All instruments	All instruments	All instruments	DTC, CB, OS, GG for OI	2007

35.	Peru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
36.	Philippines	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
37.	Poland	n.a.	n.a.	n.a.	n.a.	Included in production, but not available separately	n.a.	n.a.	n.a.	n.a.	Included in production, but not available separately.	
38.	Portugal	All instruments,	All instruments	All instruments	All instruments	n.a.	All instruments,	All instruments	All instruments	All instruments	n.a.	1996
39.	Russian Federation	All instruments,			All instruments	CB (for RA) only	All instruments,			All instruments	no	2001
40.	Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
41.	Singapore	RA	n.a.	RA	n.a	CB (for RA) only	n.a.	n.a.	n.a.	n.a.	no	
42.	South Africa	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
43.	Spain	All instruments,	All instruments	All instruments	All instruments	For all sectors	All instruments,	All instruments	All instruments	All instruments	For all sectors	2013
44.	Sri Lanka	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
45.	Sweden	n.a.	n.a.	DID	DID, OI	DTC and OS for DID	n.a.	n.a.	DID	DID OI	DTC and OS for DID	2013
46.	Switzerland	All instruments,	All instruments	All instruments	All instruments	DTC, OS, CB (for RA)	All instruments,	All instruments	All instruments	All instruments	DTC, OS; CB and GG for OI	2016
47.	Thailand	All instruments,	All instruments	All instruments	All instruments	n.a.	All instruments,	All instruments	All instruments	All instruments	n.a.	2012
48.	Tunisia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
49.	Turkey	DIE, PIE, PID, RA	RA	DIE, PIE, PID, RA	DIE, DID, PIE, PID, OI, RA	OS for DIE, OS and DTC for PIE and PID, CB for RA	DIE, DID, PIE, PID	DIE	DIE, DID, PIE, PID	DIE, DID, PIE, PID	OS and DTC for DIE; OS for DID, OS and DTC for PIE; OD, DTC and GG for PID and PID	2015
50.	United Kingdom	For total assets	For total assets	For total assets	For total assets	n.a	For total liabilities	For total liabilities	For total liabilities	For total liabilities	n.a.	2001
51.	United States	All instruments, except FD	All instruments, except FD	All instruments, except FD	All instruments, except FD	DTC and OS for PIE, PID, OI;	All instruments, except FD	All instruments, except FD	All instruments, except FD	All instruments, except FD	DTC and OS for PIE, PID, OI; GG for OI	2003
52.	Uruguay	All instruments,	DIE, PIE, PID, FD	DID, RA	DID, OI, RA	n.a.	All instruments,	DIE, PIE, PID	DID, PIE, PID	DID, OI	n.a.	2012

Annex 2. Availability of Data on Currency Composition[18]

Economy		Assets						Labilities					Series start date
		Direct investment	Portfolio investment	Financial derivatives	Other investment	Reserve assets	Currency composition is available from existing data sources	Direct investment	Portfolio investment	Financial derivatives	Other investment	Currency composition is available from existing data sources	
1.	Argentina	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
2.	Australia	Full composition for total assets only	Full composition for total assets only	Full composition for total assets only	Full composition for total assets only	Full composition for total assets only	n.a	Full composition for total liabilities only	Full composition for total liabilities only	Full composition for total liabilities only	Full composition for total liabilities only	n.a	1996
3.	Austria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
4.	Belgium	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	Detailed currency composition for all functional categories/sectors	2013
5.	Brazil	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
6.	Canada	n.a.	Full composition separately for equity/debt.	n.a.	Full composition	SDR/non-SDR currencies	For all functional categories/sectors	n.a..	Full composition separately for equity/debt.	n.a.	Full composition	For all functional categories/sectors	2015
7.	Chile	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
8.	China	National currency/foreign currency	National currency/foreign currency	National currency/foreign	n.a.	n.a.	Based on estimates	National currency/foreign currency	National currency/foreign currency	National currency/foreign currency	n.a.	Based on estimates	2017

[18] DI – direct investment (E – equity, D – debt instruments), PI – portfolio investment (E – equity, D – debt instruments), OI – other investment, RA – Reserve assets, FD – financial derivatives, CB – central bank, DTC – deposit taking corporations, GG – general Government, OS – other sectors.

		separately for equity/debt	separately for equity/debt	currency				separately for equity/debt	separately for equity/debt				
9.	Colombia	Full composition separately for equity/debt	National currency/foreign currency for debt	National currency/foreign currency separately for debt	n.a.	SDR/non-SDR currencies	For DI and PI debt of other sectors - national/foreign currency split only; for OI DTC and reserve – full composition	National currency/foreign currency	Full composition for debt	National currency/foreign currency	Full composition	For DI of other sectors and PI equity and FD of DTC - national/foreign currency split only; PI debt and OI for DTC and Government – full composition	1996
10.	Costa Rica	n.a.	Full composition for debt	n.a.	n.a.	SDR/non-SDR currencies	Detailed currency composition for PI debt for other sectors and RA	n.a.	n.a.	n.a.	n.a.	n.a.	2014
11.	Czech Republic	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for DI equity all sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	Based on estimates	2013
12.	Denmark	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composition	Detailed currency composition for all functional categories/sectors	2005
13.	Egypt	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
14.	Finland	n.a.	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for PI all sectors, OI all sectors except government, and RA	n.a.	Full composition separately for equity/debt	Full composition	Full composition	Detailed currency composition for PI all sectors, FD, and OI all sectors except government	2013
15.	France	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	Detailed currency composition for all functional categories/sectors	2008
16.	Germany	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	Detailed currency composition for all functional categories/sectors	2012
17	Greece	n.a.	Full	n.a.	n.a.	SDR/n	Detailed currency	n.a.	Full	n.a	n.a	Detailed currency	2004

.			composition separately for equity/debt			on-SDR currencies	composition for PI equity/debt all sectors		composition for debt			composition for PI debt all sectors.	
18.	Guatemala	n.a.	n.a.	n.a.	n.a.	SDR/non-SDR currencies	National/foreign currency split for DI equity/debt, PI debt, OI	n.a.	n.a.	n.a.	n.a.	National/foreign currency split for DI equity/debt, PI debt, OI	2013
19.	Hong Kong	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
20.	Hungary	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composition	Detailed currency composition for all functional categories/sectors	1999
21.	India	n.a.	n.a.	n.a.	n.a.	n.a.	National/foreign currency split for DI, PI equity/debt, OI for all sectors	n.a.	n.a.	n.a.	n.a.	National/foreign currency split for PI equity/debt, OI for all sectors	
22.	Indonesia	n.a.	n.a.	n.a.	n.a.	SDR/non-SDR currencies	n.a.	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composition	Detailed currency composition for all functional categories/sectors	2010
23.	Ireland	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
24.	Israel	n.a.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
25.	Italy	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composition	Detailed currency composition for all functional categories/sectors	2008
26.	Japan	n.a.	Full composition separately for equity/debt	n.a.	n.a.	n.a.	Detailed currency composition PI debt for all sectors	n.a.	Full composition separately for equity/debt from 2014	n.a.	n.a.	Detailed currency composition for PI debt for all sectors	2004
27.	Korea	n.a	n.a.	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
28.	Malaysia	n.a	n.a.	n.a.	n.a.	n.a	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	
29.	Mexico	n.a	n.a.	n.a.	n.a.	SDR/non-SDR currenc	National/foreign currency split for PI, equity/debt and OI for DTC and CB	n.a	n.a.	n.a.	n.a.	National/foreign currency split for PI, equity/debt and OI for DTC and	2000

						ies	sectors					CB sectors	
30.	Morocco	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
31.	Netherlands	n.a.	Full composition separately for equity/debt	n.a.	n.a.	SDR/non-SDR currencies	National/foreign currency split for DI DTC and GG sectors and FD all sectors, detailed currency composition for PI equity/debt and OI all sectors	n.a.	Full composition separately for equity/debt	n.a.	n.a.	National/foreign currency split for DI equity, and FD for all sectors; detailed currency composition for DI debt OS, PI equity/debt and OI all sectors	2009
32.	New Zealand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
33.	Norway	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
34.	Pakistan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
35.	Peru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
36.	Philippines	n.a.	n.a.	n.a.	n.a.	SDR/non-SDR currencies	n.a.	n.a.	Full composition for debt	n.a.	n.a.	National/foreign currency split for PI equity OS, for all sectors; detailed currency composition for PI debt for OS	2017
37.	Poland	Full composition separately for equity/debt	Full composition separately for equity/debt	Full compositio n	Full composit ion	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composit ion	Detailed currency composition for all functional categories/sectors	2010
38.	Portugal	n.a.	n.a.	n.a.	n.a.	SDR/non-SDR currencies	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1996
39.	Russia	National/foreign currency split separately for equity/debt	Full composition separately for equity/debt	Full compositio n	Full composit ion	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composit ion	Detailed currency composition for all functional categories/sectors	2016
40.	Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
41.	Singapore	n.a.	n.a.	n.a.	n.a.	SDR/non-	Detailed currency composition for RA	n.a.	n.a.	n.a.	n.a.	n.a	2001

						SDR currencies							
42.	South Africa	n.a.	n.a.	n.a.	n.a.	n.a.	Detailed currency composition for PI equity/debt for OS and for OI and RA for CB	n.a.	n.a.	n.a.	n.a.	Detailed currency composition for DI equity for OS and DTC, PI equity/debt for DTC, GG, OS and for OI CB and GG	
43.	Spain	Full composition separately for equity/debt	Full composition separately for equity/debt	Full compositio n	Full composit ion	n.a	Detailed currency composition for all functional categories/sectors	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composit ion	Detailed currency composition for all functional categories/sectors	2014
44.	Sri Lanka	n.a.	n.a.	n.a.	n.a.	n.a	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
45.	Sweden	Full composition for debt	Full composition for debt	n.a.	n.a.	SDR/non-SDR currencies	National/foreign currency split for PI debt all sectors; detailed currency composition for DI debt for DTC and OS and for OI OS	Full composition for debt	National/foreign currency split for debt	n.a.	n.a.	Detailed currency composition for DI debt for DTC and OS and for OI for OS	2013
46.	Switzerland	Full composition separately for equity/debt	Full composition separately for equity/debt	Full compositio n	Full composit ion	SDR/non-SDR currencies	Detailed currency composition for all functional categories/sectors, except for FD and OI for GG and PI for CB (national /foreign currency split)	Full composition separately for equity/debt	Full composition separately for equity/debt	Full composition	Full composit ion	Detailed currency composition for all functional categories/sectors, except for FD and OI for GG and PI for CB (national /foreign currency split)	1999
47.	Thailand	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composit ion	SDR/non-SDR currencies	n.a.	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composit ion	n.a.	2006
48.	Tunisia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
49.	Turkey	Full composition separately for equity	Full composition separately for equity/debt	n.a.	Full composit ion	SDR/non-SDR currencies	Detailed currency composition for all functional categories except DI debt and FD for OS and DTC, for OI of CB and GG, and for RA	Full composition separately for equity/debt	Full composition separately for equity/debt	n.a.	Full composit ion	Detailed currency composition for all functional categories except DI debt and FD for OS and DTC for OS and DTC, for PI debt of GG and	2014

												OI for GG and CB	
50.	United Kingdom	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
51.	United States	n.a.	n.a.	n.a.	n.a.	n.a.	Detailed currency composition for OI of DTC and OC and for RA	n.a.	n.a.	n.a.	n.a.	Detailed currency composition for OI of DTC and OC	
52.	Uruguay	n.a.	Full composition separately for equity/debt	n.a.	Full composition	SDR/non-SDR currencies	Detailed currency composition for PI equity/debt for DTC and for RA, national/foreign currency split for OI of DTC	n.a.	Full composition separately for equity/debt	n.a.	Full composition	Detailed currency composition for PI debt of GG, national/foreign currency split for OI of DTC	2011