

## APPENDIX 6(C): LINKAGES WITH OTHER MACROECONOMIC DATASETS

### A. Linkages of the International Accounts with Monetary and Financial Statistics

#### Monetary and Financial Statistics: Introduction

1. The most recent methodology for compiling monetary and financial statistics is contained in the *Monetary and Financial Statistics Manual (MFSM)* (IMF, 2000). This is supplemented by the *Monetary and Financial Statistics: Compilation Guide (MFSCG)* (2008), which provides compilation advice to data compilers who are responsible at the national level for implementing the methodology and statistical frameworks. The MFSM is being updated to be consistent with *SNA 2008* and *BPM6*, and to take account of financial developments since MFSM 2000 was published. Monetary and financial statistics focus on the compilation and reporting of balance-sheet data (end-of-period stocks) for the central bank and other depository corporations. The update to the MFSM will also provide more detailed coverage of the other financial corporations sector. A major step in the implementation of the methodology in the MFSM and the MFSCG has been the introduction of standardized report forms (SRFs) for countries' transmittal of monetary data for publication in *IFS* and for operational purposes of the IMF. The SRFs are designed for reporting of stock data only. An overview of the monetary statistics framework supporting the SRFs is presented in Annex 1.

#### Common Principles and Differences in Classifications

2. Monetary statistics share many principles and concepts with *BPM6* and the *SNA*.<sup>1</sup> The *MFSM* and the *BPM6* are consistent on such issues as the definition and delineation of resident and nonresident entities, time of recording of transactions and other flows, financial asset and liability valuation, and data aggregation and consolidation. However, there are some differences in sectoring of the institutional units and in the classification of the various categories of financial assets and liabilities.

3. As regards the delineation of *institutional units and sectors*, a special case is the definition of *other depository corporations*. In the monetary statistics methodology, all financial corporations that issue liabilities included in broad money are designated as *Depository corporations*. These include the *Central bank* subsector, the *Other deposit-taking corporations* subsector, and, in many countries, money market fund shares. The latter two form the other depository corporations (ODC) subsector in MFSM. In *BPM6*, money market funds are not consolidated with deposit-taking corporations but with other financial corporations. In summary in *BPM6* the financial corporations sector is divided into: central bank, deposit-taking corporations except the central bank, and other financial corporations; while the *MFSM* defines the following subsectors: central bank, ODCs, and OFCs. Therefore if the balance of payments compiler uses monetary statistics they should request separate

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<sup>1</sup> The annex to this part contains an overview of the monetary statistics framework.

data on money market funds balance of payments transactions and IIP in order to classify their financial transactions and positions correctly within the OFC subsector. The balance of payments compiler should also confirm the institutional coverage of the *deposit-taking corporations* subsector, as some deposit-takers may be excluded; for instance, offshore banks that do not accept deposits from residents are still considered deposit-taking institutions in *BPM6* but classified as *other financial corporations* in the monetary statistics.

4. The major categories for financial assets and liabilities in the monetary statistics will follow the classification in the *2008 SNA* and *BPM6* financial instruments classification when the *MFSM* is updated. Regarding the classification of financial assets, the differences with *BPM6* that may remain after the new methodology is adopted are:

- *Classification by maturity.* In *BPM6*, loans and debt securities are divided into separate categories for short-term instruments (original maturity of one year or less) and long-term instruments. The standard components in the *MFSM* do not include loans and debt securities classified by maturity, although the SRFs include a maturity breakdown for central bank liabilities with nonresidents.
- *Classification by currency of denomination.* *BPM6* requires a breakdown of all debt assets and all debt liabilities by major currency. *MFSM* requires a breakdown of all instruments, financial assets and liabilities, except equity liabilities, into (1) national currency and (2) foreign currency.

### **Limitations in Using Monetary Statistics in Compiling an IIP, and How to Overcome Them**

5. For the compilation of the IIP using the monetary statistics as source data, the following types of limitations can be identified: valuation, coverage, sector classification, functional categories, and maturity breakdown. These limitations also affect the compilation of other external sector statistics—such as the financial account of the balance of payments and the external debt statistics—that use monetary statistics.

#### ***Valuation***

6. The valuation principles and other accounting rules in the *MFSM* and the MFSCG are in general agreement with those in *BPM6*. However, a major exception for the monetary statistics is the valuation of shares and other equity on the liability side of the sectoral balance sheets of financial corporations. For the monetary statistics, liabilities in the form of Shares and other equity are measured at book value. In *BPM6*, equity securities (for both assets and liabilities) should be valued at the market or fair value of the shares.

7. Valuing equity at book value, particularly on the SRFs has important implications. The Shares and other equity liability account in the sectoral balance sheet, instead of being sub-classified by counterpart sector, as in the rest of the accounts, is classified by types of equity resources (i.e., funds contributed by owners; retained earnings; general and special reserves; and valuation adjustments). Therefore, the value of the equity issued by the domestic financial system and held by nonresidents is not identified.

8. To cover for the compilation needs of the financial statistics, including the financial account of the *SNA*, the SRFs contain a memorandum item requesting the market or fair value of Shares and other equity by counterpart sector, thus allowing for the recognition of Shares and other equity owned by nonresidents. However, the great majority of countries do not report this memorandum item, implying that this information is not currently compiled by the monetary statisticians. To solve this situation, IIP compilers (who often do possess data on equity liabilities to nonresidents) should be encouraged to coordinate with their monetary statistics counterparts to promote the compilation of the referred SRF memorandum items, thus avoiding duplication of efforts or excessive reporting burden on financial institutions. Furthermore, foreign liabilities in the monetary statistics are often underestimated because of the lack of liabilities to non-residents in the form of equity.

### **Coverage**

9. One significant difference between *BPM6* and *MFSM* regards the treatment of money market funds, which in *BPM6* are part of the other financial corporations sector and in *MFSM* are part of the other depository corporations sector. This and other possible deviations from the *BPM6* definition of other deposit-takers is discussed above in paragraph 3.

10. For OFCs in many countries the major reporting challenges arise from the large number and diversity of OFCs, as well as from multiple channels of existing data reporting. The OFCs might well outnumber ODCs owing to the prevalence of insurance corporations, pension funds, and other financial intermediaries and auxiliaries such as financial asset dealers and brokers. In some countries, OFC data reporting is incomplete or is not performed on a timely basis (or both); reporting by some categories of OFCs may not even exist.

11. Ideally, all OFCs should report the monetary data on a timely basis directly to data compilers. However, such reporting presently exists in relatively few countries. Instead, OFCs report to government agencies responsible for supervision of particular segments of the financial services industry—for example, national agencies for supervision of securities trading or the operation of organized exchanges, and national or state supervisors of insurance corporations or pension funds. Data reporting sometimes is channeled through trade associations or other nongovernment entities that represent the interests of specific groups of OFCs.

12. Establishment of data reporting from OFCs directly to the monetary statistics compilers should result in improved data quality and timelier reporting, with the possibility of sharing these data with IIP compilers, if efforts to define and gather the data are coordinated. However, national policy may dictate that data reporting to the monetary statistics compilers be channeled through supervisory agencies to which OFCs already report. In any case, if the central bank gathers data on OFCs for monetary or financial sector analysis, and provided *BPM6* recording principles are followed these data should be useful for balance of payments purposes too, thus avoiding duplication of efforts.

### ***Sector classification***

13. The ODCs subsector may include corporations operating under the control of receivers or regulators or that are no longer dealing with the public. Technically, bankrupt

institutions that continue to operate may retain the legal status of operating banks, or a special status may be imposed. In *BPM6*, bankrupt deposit-taking corporations that continue to operate remain classified in the deposit-taking corporations institutional sector.

### ***Functional categories***

14. Monetary statistics do not use functional categories to classify financial assets and liabilities. This can pose compilation challenges where monetary statistics are used to estimate BOP/IIP data on direct investment equity transactions and positions for deposit-takers. For OFCs, as a subsector, there are compilation challenges for direct investment data when monetary data are used in BOP/IIP.

15. The emphasis on group consolidated supervision of the financial sector made the relationship between parent, subsidiary, and associate financial corporations broadly available as subaccounts within the accounting chart of accounts used by financial corporations. Nonetheless, balance of payments compilers face the difficulty of reconciling the definition of control and significant influence between financial accounting and macroeconomic statistics. In other words, these definitions in *BPM6* do not entirely correspond to the definitions found, for example, in the international financial reporting standards (IFRS). Nevertheless, the closeness of the definitions may encourage some countries to use banking supervisor data or data based on IFRS (without adjustment) for compiling the international accounts.

### ***Maturity breakdown***

16. The SRFs only contain maturity breakdown for central bank liabilities with nonresidents, but not for financial assets or for assets and liabilities in other financial subsectors. While traditional monetary analysis does not focus on maturity of financial assets, supervisory data often used to compile the monetary statistics present the short and long-term breakdowns required by *BPM6* for selected financial instruments. These breakdowns are often available to monetary statistics compilers.

17. New requirements for financial sector data focused on financial stability analysis, particularly on liquidity, are putting emphasis on the availability of maturity breakdowns useful for the compilation of the IIP<sup>2</sup>.

### **Reconciliation Exercise between Monetary Statistics and IIP**

18. This section presents tables reconciling monetary statistics and IIP components. It shows the use and limitations of the monetary statistics in details, i.e. component by component.

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<sup>2</sup> An IMF project to expand the SRFs called the Supplementary Data Report Forms (SDRFs) is under consideration. The SDRFs include maturity breakdowns.

19. As mentioned in Chapter 9, the *Sectoral Balance Sheet for Other Depository Corporations*<sup>3</sup> can be used for the deposit-taking corporations, except the central bank sector of the IIP. The *Sectoral Balance Sheet for the Central Bank* can be used to compile data for the central bank sector in the IIP. If countries complete the *Sectoral Balance Sheet for Other Financial Corporations* (OFC),<sup>4</sup> it can be used to compile IIP data for Other sectors - other financial corporations.

20. The Sectoral Balance Sheet for Other Depository Corporations, which can be used by compilers to identify and select the external assets and liabilities of deposit-taking corporations, except the central bank, are reported to the IMF through the SRFs for reporting monetary and financial data. Table 6.1 presents the reconciliation of positions of depository corporations, except the central bank vis-à-vis nonresidents with the corresponding IIP components.<sup>5</sup>

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<sup>3</sup> *Other depository corporations* include commercial banks, merchant banks, savings banks, savings and loan associations, building societies and mortgage banks, credit unions and credit cooperatives, rural and agricultural banks, and travelers' check companies that mainly engage in financial corporation activities (*MFSM*, page18).

<sup>4</sup> *Other financial corporations* include insurance corporations and pension funds, other financial intermediaries, and financial auxiliaries (*MFSM* paragraph 96; see also Table 3, page 142). *Note:* Liabilities in the form of deposits are excluded; other financial corporations may have liability positions from insurance technical reserves.

<sup>5</sup> The reconciliation of OFC vis-à-vis nonresidents with the corresponding IIP components is very similar to the one for ODC and is, therefore, not included in this annex.

**Table 6.1: Reconciliation of Other Depository Corporations' Balance Sheet Items with IIP Components**

Monetary Statistics Sectoral Balance Sheet Other Depository Corporations	IIP Deposit-taking corporations, except central bank
<b>Assets: claims on nonresidents<sup>6</sup></b>	
Foreign currency	4.2.2 Other investment, currency and deposits
Deposits (transferable and other, in national and foreign currency)	4.2.2.1 Short-term
	4.2.2.2 Long-term
Securities other than shares	2.2.2 Portfolio investment, debt securities
	2.2.2.1 Short-term
	2.2.2.2 Long-term
Loans	4.3.2 Other investment, loans
	4.3.2.1 Short-term
	4.3.2.2 Long-term
Shares and other equity	1.1 Direct investment assets, equity and investment funds shares
	1.1.1 Direct investor in direct investment enterprise
	1.1.2 Direct investment enterprise in direct investor (reverse investment)
	1.1.3 Between fellow enterprises
	2.1.2 Portfolio investment, equity and investment fund shares,
	4.1 Other equity
Insurance technical reserves	4.4.2 Other investment, Insurance, pension, and standardized guarantee schemes
Financial derivatives	3.2 Financial derivatives and employee stock options (other than reserves)
Other accounts receivable <sup>7</sup>	4.5.3 Other investment, trade credit and advances
Trade credit and advances	4.5.3.1 Short-term
Other	4.5.3.2 Long-term
	4.6.2 Other investment, Other accounts receivable - other
	4.6.2.1 Short-term
	4.6.2.2 Long-term

<sup>6</sup> Reserve assets are excluded from this table, because reserves are not commonly held by “deposit-taking corporations, except the central bank”.

<sup>7</sup> For a definition of other accounts receivable/payable, see *MFSM*, paragraph 179.

<b>Liabilities to nonresidents</b>	
Deposits (excluded from broad money, transferable and other, in national and foreign currency)	4.2.2 Other investment, currency and deposits 4.2.2.1 Short-term 4.2.2.2 Long-term
Securities other than shares (excluded from broad money, in national and foreign currency)	2.2.2 Portfolio investment, debt securities, 2.2.2.1 Short-term 2.2.2.2 Long-term
Loans	4.3.2 Other investment, loans 4.3.2.1 Short-term 4.3.2.2 Long-term
Insurance technical reserves	4.4.2 Other investment, Insurance, pension, and standardized guarantee schemes
Financial derivatives	3.2 Financial derivatives and employee stock options (other than reserves)
Other accounts payable Trade credit and advances  Other	4.5.3 Other investment, trade credit and advances 4.5.3.1 Short-term 4.5.3.2 Long-term 4.6.2 Other investment, Other accounts payable - other 4.6.2.1 Short-term 4.6.2.2 Long-term
Shares and other equity: market value, by holding sector ( <i>memorandum item</i> )	1.1 Direct investment liabilities, equity and investment funds shares 1.1.1 Direct investor in direct investment enterprise 1.1.2 Direct investment enterprise in direct investor (reverse investment) 1.1.3 Between fellow enterprises 2.1.2 Portfolio investment, equity and investment fund shares 4.1 Other equity

Note: Numbers shown in the table follow the numbering sequence in the standard components of the IIP in *BPM6*.

21. Table 6.1 shows that, although the sectoral balance sheet data can largely correspond with IIP components, the differences in the classification do not allow a full reconciliation of the two frameworks.

22. Table 6.2 presents the reconciliation of positions of the central bank vis-à-vis nonresidents with the relevant corresponding IIP components.

**Table 6.2: Reconciliation of Sectoral Balance Sheet Items for the Central Bank  
with IIP Components**

Monetary Statistics Sectoral Balance Sheet Central Bank <sup>8</sup>	IIP Central Bank
<b>Assets: claims on nonresidents</b>	
Monetary gold	Reserve assets 5.1 Monetary gold 5.1.1 Gold bullion 5.1.2 Unallocated gold accounts
Holdings of SDRs	Reserve assets 5.2 Special drawing rights (SDRs) - Holdings
Foreign currency included in official reserve assets	Reserve assets 5.4.1 Currency and deposits 5.4.1.1 Claims on monetary authorities 5.4.1.2 Claims on other entities
Foreign currency other	Other investment 4.2.1 Currency and deposits 4.2.1.0.1 Short term 4.2.1.0.2 Long term
Deposits in national currency (transferable and other)	Other investment 4.2.1 Currency and deposits 4.2.1.0.1 Short term 4.2.1.0.2 Long term
Deposits in foreign currency (transferable and other) Included in Official Reserve Assets Other	Reserve assets 5.4.1 Currency and deposits 5.4.1.1 Claims on monetary authorities 5.4.1.2 Claims on other entities  Other investment 4.2.1 Currency and deposits 4.2.1.0.1 Short term 4.2.1.0.2 Long term
Securities other than shares Included in Official Reserve Assets Other	Reserve assets 5.4.2.1 Debt securities 5.4.2.1.1 Short-term 5.4.2.1.2 Long-term  Portfolio investment 2.2.1 Debt securities 2.2.1.1 Short term 2.2.2.1 Long-term
Loans Loans to IMF Repurchase Agreements Included in Official Reserve Assets Other Other loans	Reserve assets 5.4.4 Other claims  Other investment 4.3.1 Loans 4.3.1.1 Credit and loans with the IMF (other than reserves)

<sup>8</sup> *MFSM*, page 130.

<b>Monetary Statistics Sectoral Balance Sheet Central Bank<sup>8</sup></b>	<b>IIP Central Bank</b>
Included in Official Reserve Assets Other	4.3.1.2 Other short-term 4.3.1.3 Other long-term
Shares and other equity Included in Official Reserve Assets Other	Reserve assets 5.4.2.2 Equity and investment fund shares Portfolio investment 2.1.1 Equity and investment fund shares Other Investment 4.1 Other equity
Insurance technical reserves	Other investment 4.4.1 Insurance, pension, and standardized guarantee schemes
Financial derivatives Included in Official Reserve Assets Other	3.1 Financial derivatives (other than reserves) and employee stock options  Reserve assets 5.4.3 Financial derivatives (net)
Other accounts receivable Trade credit and advances Other	Other investment 4.5.1 Trade credit and advances 4.5.1.1 Short-term 4.5.1.2 Long-term 4.6.1 Other accounts receivable - other 4.6.1.1 Short-term 4.6.1.2 Long-term

<b>Liabilities to nonresidents</b>	
Currency in circulation (nonresidents' holdings, not separately identified in balance sheet)	Other investment 4.2.1 Currency and deposits 4.2.1.0.1 Short term 4.2.1.0.2 Long term
Deposits excluded from broad money (transferable and other, in national and foreign currency) <sup>9</sup> Short-term Long-term	
Securities other than shares excluded from broad money Short-term Long-term	Portfolio Investment 2.2.1. Debt securities 2.2.1.1 Short-term 2.2.1.2 Long-term
Loans Loans from IMF Repurchase Agreements Short-term Long-term Other loans	Other investment 4.3.1 Loans 4.3.1.1 Credit and loans with the IMF 4.3.1.2 Other short-term 4.3.1.3 Other long-term

<sup>9</sup> It includes IMF accounts and use of Fund credit.

Short-term Long-term	
Financial derivatives Short-term Long-term	3.1 Financial derivatives (other than reserves) and employee stock options
Other accounts payable Trade credit and advances Other	Other investment 4.5.1 Trade credit and advances 4.5.1.1 Short-term 4.5.1.2 Long-term 4.6.1 Other accounts payable - other 4.6.1.1 Short-term 4.6.1.2 Long-term
SDR Allocations	4.7 SDRs (Allocations)

Note: Numbers shown in the table follow the numbering sequence in the standard components of the IIP in *BPM6*.

23. Tables 6.1 and 6.2 demonstrate that there may be a number of limitations when using monetary statistics to derive the IIP. In many instances, monetary statistics do not provide enough detail to compile the full breakdown of standard components in the IIP. But both systems have enough in common to consider pursuing a coordinated effort to use the same source data with the necessary details to compile both types of statistics. When properly designed and implemented, this approach would avoid duplication of effort and improve consistency between these related data sets.

## Overview of the Monetary Statistics Framework

24. This annex describes the framework for the compilation of *monetary statistics* in accordance with the methodology recommended in the *MFSM* and the *MFSCG*. The monetary statistics cover stock and flow data on the assets and liabilities of the financial corporations sector and its subsectors.
25. The monetary statistics include data for all institutional units in the *financial corporations sector*, as described in Chapter 3 of the *MFSM*. For compiling the monetary statistics, the financial corporations sector is divided into the *central bank subsector*, the *other depository corporations subsector*, and the *other financial corporations subsector*, the last of which encompasses the 1993 SNA subsectors for insurance corporations and pension funds, other financial intermediaries, and financial auxiliaries. Taken together, the central bank and other depository corporations constitute the *depository corporations subsector*.
26. The framework for the monetary statistics recommended in the *MFSM* embodies two levels of data compilation and presentation. At the first level, stock and flow data reported by individual institutional units are aggregated into *sectoral balance sheets*, which contain comprehensive data for the individual financial corporations subsectors—that is, the central bank, other depository corporations, and other financial corporations. At the second level, the data in the sectoral balance sheets are consolidated into *surveys*.
27. Surveys are compiled for financial corporations subsectors and for the entire financial corporations sector. The *depository corporations survey (DCS)* and its component surveys—the *central bank survey (CBS)* and the *other depository corporations survey (ODCS)*—are the major focus of the monetary statistics and constitute a core set of data for macroeconomic analysis. The *DCS* contains stock and flow data on the depository corporations' liabilities that are components of broad money, as nationally defined, and data on the depository corporations' assets that are claims on (i.e., credit to) other sectors of the economy. The *DCS* also contains data on the depository corporations' claims on and liabilities to nonresidents. The *CBS* and *ODCS* show the data that are consolidated to obtain the *DCS* and other data that are used in monetary and credit analysis at the separate levels of the central bank and other depository corporations.
28. The monetary statistics framework also includes the *financial corporations survey (FCS)*, which extends the coverage beyond the depository corporations covered in the *DCS*. In the *FCS*, the stock and flow data from the *DCS* are consolidated with the data from the *other financial corporations (OFCS)*, which contains stock and flow data consolidated for insurance corporations and pension funds, other financial intermediaries, and financial auxiliaries. The *FCS* thereby provides the stock and flow data for analyzing claims on and liabilities to all other sectors of the economy and nonresidents, at the level of the entire financial corporations sector. In particular, the *FCS* shows a comprehensive measure of credit extended by financial corporations.

29. The purpose of the **sectoral balance sheets** is to provide a framework for the collection and presentation of data in a format that facilitates the compilation of surveys, as described in the preceding paragraphs. The data for a sectoral balance sheet are obtained from the individual institutional units within a financial corporations subsector and are classified into standard components, in accordance with the sectorization, instrument classification, and accounting principles in the *MFSM*. In addition, sectoral balance sheets are directly useful for analyses requiring subsector data that are more highly disaggregated than the asset and liability categories shown in the corresponding financial subsector surveys.

30. The **surveys** contain stock and flow data<sup>10</sup> encompassing all assets and liabilities for the units covered by the respective survey. Each is based on data for all institutional units within the subsector. Thus, the term *survey* refers to comprehensive data for all units in a subsector, rather than to sample survey data that would cover only a subset of units or only a subset of the asset and liability accounts.

31. The *DCS* covers the accounts of the depository corporations and is a consolidation of the *CBS* and the *ODCS*. The *FCS* is a consolidation of the *DCS* and the *OFCS*.

32. For many countries, the *DCS* will constitute the principal set of monetary statistics for macroeconomic policy. The *DCS* is a consolidated statement of stocks and flows for the accounts of all financial sector corporations that incur liabilities included in the national definition of broad money. The framework of the *DCS* is designed to facilitate analysis of broad money and its components, credit aggregates and their components, and depository corporations' foreign assets and liabilities and other assets and liabilities.

33. By maintaining the balance-sheet identity in the *DCS*, the broad money liabilities of depository corporations are linked to their claims on (i.e., credit to) nonresidents and sectors of the domestic economy, and to their other assets and liabilities. This balance sheet identity is reflected in the stock and flow data in the *DCS*.

34. The *DCS* is structured to facilitate macroeconomic analysis that makes use of the linkages between the monetary statistics and other macroeconomic statistics. The balance sheet presentation of the *DCS* links depository corporations' broad money liabilities to their foreign assets and liabilities and to their claims on and liabilities to central government, thereby linking the monetary statistics to the balance of payments and government finance statistics, respectively.

35. The *DCS* can be rearranged to show that broad-money liabilities (BML) equal the sum of net foreign assets (NFA), domestic credit (DC), and other items (net) (OIN). That is, the opening or closing stock positions in the *DCS* can be shown as

$$BML = NFA + DC - OIN$$

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<sup>10</sup> Through the SRFs, the IMF collects only stock data.

*DC* comprises credits to resident sectors (domestic credit). *OIN* denotes a residual category for *other liabilities* less *other assets*, when *other liabilities* includes all liabilities not included in broad money.

36. Total flows (closing stocks less opening stocks) for the *DCS* are shown as

$$\Delta BML = \Delta NFA + \Delta DC - \Delta OIN$$

where  $\Delta$  denotes a total flow (period-to-period change). The flow data in each category in the *DCS* are decomposed into separate flows for transactions, valuation changes, and OCVA.

Changes in broad money liabilities can arise from changes in the foreign assets and foreign liabilities of the depository corporations, as can be seen from the identity that links  $\Delta BML$  to  $\Delta NFA$ , shown in the preceding paragraph.