



## Measuring Global Flow of Funds and Integrating Real and Financial Accounts: Concepts, Data Sources and Approaches

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## **Abstract**

This paper focuses on the three main problems of Global Flow of Funds (GFF): the definition of GFF, integrating GFF Statistics with SNA, and data sources and approaches. Based on the GFF definition, the paper clarifies the integrated framework for measuring the GFF, and integrates the systematic relationship of financial inter-linkages reflected in the Balance of Payments (BOP), International Investment Position (IIP), the “rest-of-the-world” account of National Accounts, and the Balance Sheet. This paper sets out the GFF’s concepts and existing data sources to construct an external statistics’ matrix (metadata) on a from-whom-to-whom basis. The main outcome is a prototype template of stock and flow data, geographically broken down by national/regional economies, and created by the GFF’s matrix.

**Keywords:** Global flow of funds, Integrating framework, Data sources, Statistics’ matrix.

## **1. Introduction**

Corresponding to a sharp change in the financial market, a few researchers began looking at the GFF starting in the 1990s. Ishida (1993) put forward the idea of GFF analysis, discussed the concept of GFF, and measured the international capital flows between Japan, the U.S. and Germany. He extended the scope of flow-of-funds analysis from national to global, and suggested international capital flows should be included in the GFF.

Zhang (2005) draws on the research results above. He linked real transactions with financial transactions based on the dynamic process of flow of funds, and established the theory framework for GFF analysis through three factors: domestic savings-investment, foreign trade, and international capital flow. He built the econometric model of GFF, and carried out the empirical analysis for the international flow of funds in East Asia. Lastly, a summary of research on the GFF should also include Tujimura’s work (2008). Based on the concept of GFF, they used the financial matrix method to test the conduction aspects of financial policy and the effect of international flow of funds in the Euro area. This was pioneering research.

In April 2009, the G-20 Finance Ministers and Central Bank Governors Working Group on Reinforcing International Co-operation and Promoting Integrity in Financial Markets called on the International Monetary Fund (IMF) and the Financial Stability Board (FSB) to explore information gaps and provide appropriate proposals for strengthening data collection and reporting back to the Finance Ministers and Central Bank Governors. As a result of the meeting, the IMF and FSB proposed

maintenance and expansion of the resultant statistics in October 2009. The principal focus centered on Recommendation 15, as financial and economic crises are characterized by abrupt revaluations or other changes in the capital positions of key sectors of the economy. Recommendation 15 states that, “The IAG, which includes all agencies represented in the Inter-Secretariat Working Group on National Accounts, to develop a strategy to promote the compilation and dissemination of the Balance Sheet Approach (BSA), Flow of Funds, and sectoral data more generally, starting with the G-20 economies. Data on nonbank financial institutions should be a particular priority,” etc.<sup>1</sup> Thus, Recommendation 15 also implies, through its reference to compiling “flow of funds” statistics, compilation of breakdowns of the financial positions and flows of each economic sector by its counterparty sectors. Datasets providing this kind of information are said to provide “from-whom-to-whom” financial statistics. In such a situation, we also need to understand and measure the flow of funds between countries, namely the Global Flow of Funds (GFF).

On the other hand, there is international awareness of the issue that the existing statistical data does not describe the risks inherent in a financial system. Previous research has evolved into discussion about the basic concept of GFF and a proposal to make a statistical framework for GFF. The recent global crisis showed how easily shocks in one country are transmitted and amplified, and rapid illiquidity in financial markets spread quickly across national borders. Therefore, IMF’s Statistics Department has already organized seven economies with systemically important financial centers to construct a GFF mapping domestic and external capital stocks, geographically broken down, etc.<sup>2</sup> This means that the observation of GFF has not just remained in theoretical research, but has also entered the stage of experiment and statistical application. GFF is the extension of domestic flow of funds. It connects domestic economies with the rest of the world<sup>3</sup>. GFF data would provide valuable information for analyzing interconnectedness across borders, global liquidity flows, and global financial interdependencies.

This paper referenced “the report of the Financial Crisis and Information Gaps” that was prepared by the IMF and the FSB. The main purpose of the paper was to measure GFF and apply the result to regular monitoring of the GFF. The composition of this paper is as follows. Firstly, this paper clarifies the concept of GFF, after stating the transmission mechanism of GFF. Secondly, according to the concept of GFF, this paper will make an integrated framework for measuring GFF. The third part, data sources and approach, is also very important. The paper sets out the concepts and existing data sources, and the Balance Sheet Approach (BSA) is used to break down the rest of the world by components of IMF data sources and BIS data sources. In the fourth part, the paper discusses designing a GFF matrix through the use of metadata. The main outcomes and the issues which remain are summarized within the conclusion.

## **2. The transmission mechanism of Global Flow of Funds**

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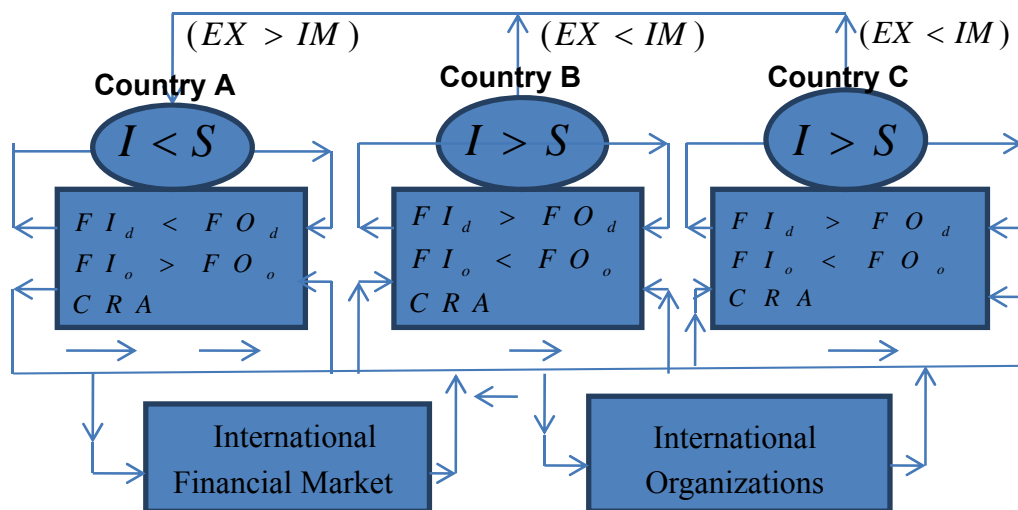
<sup>1</sup> Financial Stability Board and International Monetary Fund (2009). The Financial Crisis and Information Gaps—Report to the G-20 Finance Ministers and Central Bank Governors, p. 10.

<sup>2</sup> Luca Errico, et al.,(2013)

<sup>3</sup> Nan Zhang, (2005)

The financial markets indicate the debts and credits of funds as a whole, in addition to the total process of financial liquidity. Investigated more carefully, additional aspects of financial markets include inflows of domestic funds, overseas funds by domestic savings, and bank credit loans on the side of fund-sources (funds inflow). On the other hand, financial markets are split into supply of funds to the domestic economy and overseas sector as fund-uses (funds outflow). In this section, we will therefore discuss the transmission mechanism of GFF, and according to this transmission mechanism, give the definition of GFF.

Figure 1 is a figure showing the transmission mechanism of GFF among three countries: A, B and C; an international financial market; and an international organization. The economies of the three countries consist of the balance of savings-investment which reflects real economy activity, and the financial market which indicates the financial circulation of funds. As a balance between the domestic economy and the overseas sector in each country, real economy (savings-investment balance) serves as a current balance, and the fund loan balance in the financial market serves as the capital balance from an international viewpoint. The current transactions and capital transactions of each country are connected internationally, and a part of capital transaction links to an international financial market formed by fund-rings in GFF.



**Figure 1. The Transmission Mechanism of Global-Flow-of-Funds**

Notes:  $FI_d$  : Domestic Inflow of Funds                       $FI_o$  : Overseas Inflow of Funds  
 $FO_d$  : Domestic Outflow of Funds                       $FO_o$  : Overseas Outflow of Funds  
 $CRA$  : Changes in Reserve Assets

In Figure 1, the excess savings corresponding to current balance surplus occurs in the country of the capital supplier (Country A), causing financial assets to see a net increase in the financial sector. The financial market receives inflow of funds from the domestic and overseas sectors, and supplies funds to the two sectors simultaneously. In the fund loan balance of country A's financial market, the

net inflow of funds corresponds to the excess savings balance in the domestic sector, and the net outflow of funds (including the change in foreign exchange reserves) corresponds to the current account surplus in the overseas sector. That is, the net increase in financial assets which offsets the excess domestic savings is balanced by the net inflow of funds from the domestic sector in the financial market. Likewise, the external claimable assets resulting from the current balance surplus becomes the net outflow of funds from the financial market in the form of overseas lending.

On the other hand, in the case of a capital importer such as country B or C, the current balance deficit is linked to the domestic excess of investment (savings deficit) and the net increase of the financial liability in the financial sector. In the financial market, there is an excess of credit with the domestic excess of investment, and the current account deficit is financed by the net inflow of funds (capital balance surplus) from overseas. Therefore, on the funds account balance for the sectors of the domestic-and-overseas in the financial markets of countries B and C, a net outflow of funds occurs with the domestic sector, and a net inflow of funds with the overseas sector. The net inflow of funds from the overseas sector becomes a source of funds for the domestic sector that attempts to maintain a balance of credit. Moreover, the net outflow of funds into the domestic sector in the financial market causes over-borrowing for the domestic sector, also known as a net increase in financial liability.

In this way, an international capital movement from a surplus country of current balance to a deficit country arises. The flow of capital moves directly between two nations, from a surplus country to a deficit country, or may also arise indirectly in countries via the international financial market, the IMF, the World Bank, etc. These international funds will be managed by an agency of a public intergovernmental organization, or as part of the World Bank, although most of the funds arise through factors such as the pursuit of interest differential or capital gain and risk aversion through a market mechanism. In any case, international capital movement will be financed with the balance on the current account from the standpoint of Balance of Payment in each country, and will perform the function of international financial intermediation from an excess-savings country to a deficit-savings (excess-investment) country from a global standpoint. Moreover, when a capital supplier country is a key-currency country (like the U.S.), this country serves the function of supplying international liquidity. By thoroughly observing the flow of funds, funds mobility (international liquidity and the domestic money supply) can be seen as an integrated system in GFF which connects major power economies, as the flow of funds between countries is connected with the domestic flow of funds as an integrated whole in each of the relevant countries.

Since the definition of GFF is concerned with the range of measuring, it is necessary to clarify the definition theoretically. According to the transmission mechanism of GFF above, we define GFF as follows: GFF is the flow of funds which relates to the domestic flow of funds and to the external flow of funds. This not only relates to the balance of savings-investment and the current account, but is also linked to international capital flows between countries. The statistical domain of GFF includes the flows of all domestic funds with investment-savings, links the flow of funds with current balance, and connects international capital flows. GFF Statistics (GFFS) should incorporate the capture of bilateral country flow of funds.

### 3. An Integrated Framework for Global Flow of Funds

In order to observe systematic financial crisis through GFF, an integrated framework must be used as the foundation of a statistical monitoring system. When the flow of funds in financial markets is tied up with the balance of payments, the rest of the world sector will have fund outflow excess (net capital outflows) if the current account is in surplus. Conversely, the domestic sector will have fund inflow excess. Therefore, when the real economic side of the domestic and overseas economy is analyzed under an open economic system, the balance of savings-investment of the domestic economy corresponds to the current account balance. However, domestic net funds outflow corresponds with the capital account balance when we examine the financial relationship between domestic flow of funds and external flow of funds. For this reason, relationships among the domestic savings-investment balance, the financial surplus or deficit, the current account, and the external flow of funds should be expressed in an integrated framework to provide joint routine monitoring of GFF.

According to the definition of GFF, and in order to allow for the integration of Real and Financial Accounts for measuring GFF, we must set up an integrated framework for GFFS, as seen in Table 1.

**Table 1. A Framework for Measuring Global Flow of Funds**

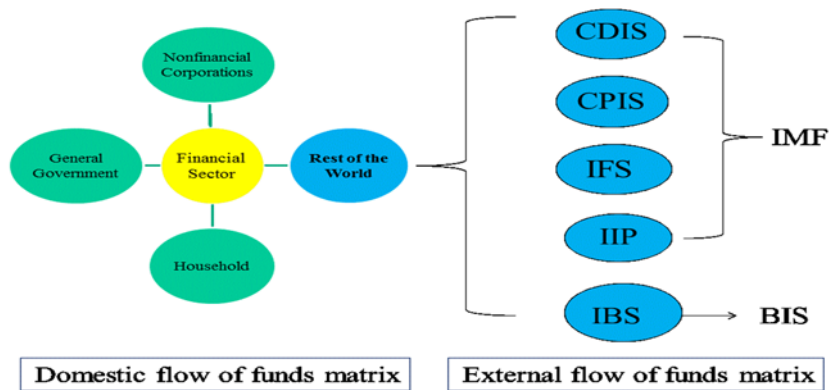
Stocks		Flows		Stocks	
Opening Balance Sheet		Transactions	Other Changes	Closing Balance Sheet	
Nonfinancial Assets		Savings-Investment Balance Current Account Balance		Nonfinancial Assets	
Assets (by financial category)				Assets (by financial category)	
Direct Investment				Direct Investment	
Portfolio Investment				Portfolio Investment	
Other Investment				Other Investment	
Reserves Assets				Reserves Assets	
Total Assets		Change in Financial Assets		Total Assets	
Liabilities (by financial category)				Liabilities (by financial category)	
Direct Investment				Direct Investment	
Portfolio Investment				Portfolio Investment	
Other Investment				Other Investment	
Total Liabilities		Change in Financial Liabilities		Total Liabilities	
Net Position		Change in Net Worth		Net Position	

The integrated framework is based on the BSA, using data from stocks. First, for integrating Real and Financial Accounts, we put items in the nonfinancial assets, savings-investment balance and current balance categories in a position in the flow diagram to show the structural relationship of real economies and financial economies in GFF. Within the financial category, we include financial assets, financial liabilities, and net position, as seen in Table 1. Four aspects of external financial positions and flows should be monitored: 1) an indication of any influence on current accounts from changes in economic structure which causes savings-investment imbalances; 2) an indication of any risks in international capital flow caused by a surplus or a deficit of domestic funds; 3) an indication of any shocks to international capital flow caused by an imbalance in current accounts, and by international large-scale capital inflows or outflows; 4) an indication of any causes of change in foreign exchange

reserves and pressure of financial instability from rapid changes in foreign exchange reserves. Using the integrated framework to construct GFF would provide valuable information for the analysis of interconnectedness across borders, global liquidity flows, and global financial interdependencies. And the framework could also be extended to flow data. For this next step, we would then break down the data sources by sector and counterpart country.

#### 4. The Data Sources for Global Flow of Funds

The metadata of GFFS should be based on existing statistical data, and therefore have many similarities of approach with them. The data sources for GFF include not only the “rest-of-the-world” account of national accounts, but also balance of payment, monetary and financial statistics, IIP statistics and BIS international banking statistics. The prototype template for the main data is shown in figure 2. Two metadata matrices are then discussed, which summarize the concepts, draw out what data are available, and identify the major data gaps. These two matrices cover the Domestic Assets and Liabilities (DAL) and the External Assets and Liabilities (EAL). The matrix could be extended to flow data.



**Figure 2. The prototype template for measuring GFF**

The DAL matrix is based on the Balance Sheet Approach (BSA), with the rest of the world sector data drawn from the National Accounts and IIP. The EAL matrix presents metadata on whatever external sector financial stock data are available, by IIP category, drawing on IMF and BIS data sources. The IIP is the link between the domestic and external matrices.

Data from IMF’s Monetary and Financial Statistics, IIP and the National Accounts are used to derive the BSA matrix. The BSA matrix can provide information about a country or region’s financial corporations’ stock positions for residents and nonresidents. In the EAL matrix, the datasets with bilateral counterpart country details collected by the IMF and BIS are as follows.

(i) Foreign direct investment<sup>4</sup>: The Coordinated Direct Investment Survey (CDIS) provides bilateral counterpart country details on “inward” direct investment positions (i.e., direct investment into the reporting economy) cross-classified by economy of immediate investor, and data on “outward”

<sup>4</sup> See Luca Errico et al., 2013.

direct investment positions (i.e., direct investment abroad by the reporting economy), cross-classified by economy of immediate investment, as well as mirror data for all economies.

(ii) Portfolio investment: The Coordinated Portfolio Investment Survey (CPIS) provides bilateral counterpart country details covering holdings of asset stock positions by reporting economies and derived (mirror<sup>5</sup>) liabilities for all economies. The purpose of the CPIS is to improve statistics of holdings of portfolio investment assets in the form of equity, long-term debt, and short-term debt. It is also used to collect comprehensive information, with geographical detail on the country of residence of the issuer, on the stock of cross-border equities, long-term bonds and notes, and on short-term debt instruments for use in the compilation or improvement of IIP statistics on portfolio investment capital.

(iii) Other investment: Other investment is a residual category that includes positions and transactions other than those included in direct investment, portfolio investment, financial derivatives and employee stock options, and reserve assets.<sup>6</sup> Other investment includes: (a) other equity; (b) currency and deposits; (c) loans (including use of IMF credit and loans from the IMF); (d) nonlife insurance technical reserves, life insurance and annuities entitlements, pension entitlements, and provisions for calls under standardized guarantees; (e) trade credit and advances; (f) other accounts receivable/payable; and (g) SDR allocations (SDR holdings are included in reserve assets). In order to reflect the bilateral counterpart country for loans, deposits, and other assets and liabilities, this paper put the related dataset with BIS International Banking Statistics (IBS) instead of IIP Statistics.

(iv) The BIS compiles and publishes two sets of statistics on international banking activity, which includes Locational Banking Statistics (LBS) and Consolidated Banking Statistics (CBS). This paper utilizes LBS in the dataset, because the BIS locational data provides quarterly information on claims and liabilities of banks vis-à-vis banks and nonbanks located in other countries worldwide. They are based on the economy of location or residence of the creditor bank and can also be used to mirror data for non-reporting countries. They are used in the external statistics' matrix.

(v) For data on reserve assets: The Data Template for the Balance of Payment, the IIP and Currency Composition of Official Foreign Exchange Reserves (COFER) provide country-level data, while the Survey of Securities Held as Foreign Exchange Reserves (SEFER) provides counterpart country data for all SEFER reporters as a group<sup>7</sup>. For supplementing data on reserve assets, International Financial Statistics (IFS) which includes World Total Reserves, World Gold, World Reserve Position in the Fund, World SDR Holdings and World Foreign Exchange, can also be used.

In this paper, IIP data have been used to supplement the data for constructing the EAL matrix. The IIP is a subset of the national balance sheet, the net IIP plus the value of nonfinancial assets equaling the net worth of the economy, which is the balancing item of the national balance sheet. The IIP relates to a point in time, usually at the beginning of the period (opening value) or the end of the period (closing value).

GFFS can construct a statistical framework if concepts, definitions and classifications underlying these statistics are standardized across economies. Fortunately, we can get these standards from

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<sup>5</sup> Mirror data refers to the same data as seen from different perspectives. For instance, banks' loans to households could be said to be mirror data of household debt to banks.

<sup>6</sup> IMF, *Balance of Payments Manual, 6th edition (BPM6)*, 111.

<sup>7</sup> Luca Errico et al., 2013.



2008SNA, the IMF's *Monetary and Financial Statistics Manual 2000*, *Balance of Payments Manual (BPM6)*, and the BIS's *Guidelines for Reporting the BIS International Banking Statistics*

## 5. The From-Whom-to-Whom Framework for Global Flow of Funds

**Table 2. Domestic Assets and Liabilities Matrix by Balance Sheet Approach**

Issuer of liability (debtor) Holder of liability (creditor)	General Government			Financial Sector			Nonfinancial Corporations			Household			Rest of the World		
	A	L	NP	A	L	NP	A	L	NP	A	L	NP	A	L	NP
Nonresidents															
Currency and deposits															
Securities other than shares															
Loans															
Shares and other equity															
Insurance technical reserves															
Financial derivatives															
Other accounts receivable															

As a transition preparation for making the EAL matrix, we made the DAL matrix (Table 2) first. Table 2 shows for the rest of the world sector each financial instrument: stocks of the issuer of a liability (the debtor) on the horizontal axis, and stocks of the holder of a liability (the creditor) on the vertical axis. The DAL matrix is based on the BSA matrix methodology. The matrix identifies five sectors, the data for the rest of the world and how it relates to: (i) general government; (ii) financial corporations; (iii) nonfinancial corporations; and (iv) the household sector. Each column corresponds to the balance sheet of the sector in question, and the assets and liabilities are then listed in the rows by instrument, with the counterparty sectors identified for each cell.

The rest of the world sector data are drawn from the international investment position (IIP); assets in the IIP are recorded as liabilities of nonresidents in the BSA, and IIP liabilities represent nonresidents' claims in the BSA. Cross-border liabilities of debtors are along the horizontal axis, and cross-border claims of asset holders along the vertical axis, for each financial instrument.

The SNA provides an integrated framework for developing financial positions and flows on a from-whom-to-whom basis because its underlying principles ensure that the linkages of the economic and financial actions of an economy are captured. However, the SNA standard presentation is not explicitly designed to show the inter-sectoral linkages, as traditionally it has focused primarily on answering "who does what," but not "who does what with whom." Therefore, in the case of the DAL, we must also include "from-whom-to-whom" information on the matrix (See Table 3).

Table 3 shows the integrated framework of the DAL on a from-whom-to-whom basis by institutional sector, and the rest of the world in a matrix format. For an economy, it shows transactions, revaluations, other changes in the volume of assets and liabilities, and positions for a financial instrument acquired/held by residents (grouped into (sub) sectors) and nonresidents vis-à-vis institutional units as debtors, broken down by residency and by institutional sector (cells of Table 3 shaded grey).

**Table 3. Domestic Assets and Liabilities Matrix on a From-Whom-to-Whom Basis**

Issuer of liability (debtor) \ Holder of liability (creditor)		Residents				Nonresidents	All Debtors
		General Government	Financial Sector	Nonfinancial Corporations	Household		
Residents	General Government						
	Financial Sector						
	Nonfinancial Corporations						
	Household						
Nonresidents							
All Creditors							

The objective of the GFF approach employed in this paper is to produce full domestic and EAL matrices. Once we have these, we can link the rest of the world sector with EAL to construct the EAL matrix through the DAL matrix. The EAL matrix is also based on the BSA (see Table 4), that depicts for the rest of the world sector, the main countries for observation and Other Economies with each financial instrument/ stock of the issuer of a liability (the debtor) on the horizontal axis, and stocks of the holder of a liability (the creditor) on the vertical axis. It is the external flow of funds matrix for the observed countries or regions, where the external assets and liabilities have been disaggregated into the counterpart country, by instrument.

**Table 4. External Assets and Liabilities Matrix**

Issuer of liability (debtor) \ Holder of liability (creditor)		Rest of the World			Country A			Country B...			Other Economies		
		A	L	NP	A	L	NP	A	L	NP	A	L	NP
Direct Investment													
Portfolio Investment													
Equity Securities													
Debt Securities													
Long-time debt securities													
Short-time debt securities													
Other Investment Banks													
Non-banks													
Reserve Position in the Fund													
SDR Holdings													
Foreign Exchange													
Total IIP													

Table 4 provides a statistical framework for presenting cross-border stocks, by counterpart country and sector and instrument. It shows available external sector financial assets and liabilities' stock data broken down by country, sector of investor, and investee. Columns 2-4 of the EAL matrix are taken from the last three columns of Table 2. The matrix presents external financial asset and liability positions, showing available data by IIP category and instrument: direct investment, portfolio investment equity and debt securities (the latter displayed separately for long-term and short-term debt), other investment (separately for banks and others, using the BIS international banking statistics), and reserve assets. Table 4 shows what may be possible in a GFF framework for a country which enables the monitoring of financial positions, both regional/national and cross-border (by country and

by sector).

Although Table 4 is modeled after a traditional account form, it cannot show the intersectoral from-whom-to-whom relationships needed to measure financial positions and flows. As the *SNA* is the internationally accepted methodology for the compilation of national accounts, the lack of prominence it gives to the from-whom-to-whom principle for data compilation and presentation may be one of the reasons why these statistics are not more widely used. Therefore, in order to know “who is financing whom, in what amount, and with which type of financial instrument,” we constructed the EAL matrix on a from-whom-to-whom basis. The following proposed Table 5 reflects this approach and shows the financial instrument categories according to *2008SNA*.

According to analytical need, the EAL matrix resulting from the from-whom-to-whom table can be created to illustrate "Country vis-à-vis Country" through each financial instrument. These instruments show the connections between financial transactions, such as “direct investment,” “portfolio investment,” etc. Likewise, every financial instrument can disaggregate within the matrix on a from-whom-to-whom basis. Instruments located in the "rows" of the table describe a country relative to the counterpart country's assets, while instruments located in the "columns" describe a country relative to the counterpart country's liabilities. If all the financial instruments are totaled, that amount will equal the sum total of external financial assets and liabilities in the given country. In this way, external assets and liabilities will have been disaggregated into the counterpart country, and by instrument.

**Table 5. External Assets and Liabilities Matrix on a From-Whom-to-Whom Basis**

Counterpart Countries (Investment in):	Counterpart Countries (Investment from):				
	Rest of the World	Country A	Country B	. . .	Other Economies
Rest of the World					
Country A					
Country B					
. . .					
Other Economies					

The from-whom-to-whom compilation approach also enhances the quality and consistency of data by providing more cross-checking and balancing opportunities. When the information in Table 4 is combined with that in Table 5, we can map out the complete bilateral relationship between national/regional economies using stock data. The matrices could potentially be extended to flow data to quantify gross bilateral flows into: (i) transactions; (ii) changes in the value of a financial asset/liability; and (iii) other changes in the volume of an asset/liability. Using Table 5 we can answer the compound question, “Who is financing whom, in what amount, and with which type of financial instrument?”

## 6. Concluding Remarks

This paper reviewed the definition of GFF, clarified the integrated framework for measuring GFF, and attempted to carry out the compilation of the GFFS for external financial positions and flows on

a from-whom-to-whom basis. In addition, it will potentially fill some important data gaps in currently available macroeconomic statistics.

This paper also sets the background for promoting internationally coordinated efforts for compiling data on external financial positions and flows on a from-whom-to-whom basis using an integrated framework. The paper elaborates on the main attributes of the integrated macroeconomic accounts and the GFF matrix, which allows it to serve as the framework for compiling sector accounts, including financial positions and flows on a from-whom-to-whom-basis. In particular, the GFF integrated framework ensures three consistency rules as follows:

The core statistical structure of the GFFS for external financial positions and flows focuses on showing not only who does what, but also includes who does what with whom. This paper recommends that the GFFS becomes a part of the *SNA* in the future to incorporate the from-whom-to-whom relationship as the main underlying principle for compiling and disseminating external financial positions and flows.

The advantage of using IMF and BIS data to compile a GFF matrix within the integrated *SNA* framework (as opposed to using fragmentary data from different sources) is that such a framework ensures data consistency for all entities and for all economic flows and positions, and thus allows for a systematic understanding of the relationships between economic flows in the real and the financial spheres, financial interconnectedness, and linkages between the domestic economic and external economic matrices (e.g., between savings-investment, financial surplus or deficit, or balance of payment and international capital flows).

Finally, this paper suggests that considering the difficulties that countries are likely to face in compiling GFF accounts, implementation could occur in steps depending on current statistical development status, resource requirements, and analytical and policy needs. The following steps may provide some guidelines.

a. In order to establish GFF statistics, there is a need to integrate data sources that include CDIS, CPIS, IIP, BIS statistics, etc. in accordance with the creation standard of the *SNA*.

b. There is likewise a need to set up the GFF account to connect with the Flow of Funds account in the *SNA*. This, however, requires additional external financial positions in new data collection systems as described above for GFFS databases.

c. For rest of the world by main sector, further details for the main observation countries by subsectors and other economic flows may also be considered.

d. From-whom-to-whom external financial positions and flows for subsectors of the main observation countries and possibly other economic flows should be taken into account.

e. Finally, sectors (subsectors) and specific instruments (loans, deposits, direct investment, portfolio investment, other investment banks, reserve position in the Fund, and foreign exchange) of financial positions and flows on a from-whom-to-whom basis should ideally move from aggregated subsector and instrument details towards disaggregated subsector and instrument details.

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