

# Measuring Global Flow of Funds: A Case Study on the U.S., Japan and China

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This paper discusses the measures of the Global Flow of Funds (GFF). Based on the statistical framework for measuring GFF under Financial Accounts and Balance Sheets, the paper identifies the systematic relationship of financial linkages among economic sectors and with the rest of the world, using integrated data sources. It sets out the GFF's concept, constructs a GFF matrix (metadata) on a from-whom-to-whom basis within a "country by country" pattern, discusses existing data sources, and integrates data sources for measuring GFF, namely, data from the International Investment Position (IIP), the Coordinated Direct Investment Survey (CDIS), the Coordinated Portfolio Investment Survey (CPIS), Consolidated Banking Statistics (CBS), and "rest-of-the-world" (ROW) of financial accounts. Furthermore, a country case is presented to illustrate how the GFF matrix was compiled. Lastly, the established GFF matrix table is used to conduct empirical analysis. The main outcome is a prototype GFF template that includes stock data geographically broken down by country/region and selected financial instrument.

GFF is an extension of the domestic flow of funds. It connects domestic economies with the ROW. GFF data could provide valuable information for analyzing cross-border interconnectedness, global liquidity flows, and global financial interdependencies.

There is international awareness of the issue that existing statistical data do not reveal the risks inherent in a financial system. Previous research has evolved around establishing the basic concept and a statistical framework for GFF. The recent global financial crisis showed how easily shocks in one country are transmitted and amplified as well as how quickly liquidity in financial markets spread across national borders. In light of this, the IMF's Statistics Department has organized seven economies with systemically important financial centers to construct a GFF mapping domestic and external capital stocks, with a geographical break down (Luca et al., 2013). The main purpose of Luca et al. is to conceptually map the financial interlinkages reflected in the Balance of Payments (BOP) and the IIP statistics and in the "ROW" account of national accounts. The paper sets out the concepts and existing data sources. The Balance Sheet Approach (BSA) is used to break down the ROW by IIP components. An external statistics' matrix (metadata) exercise shows what external-sector financial data are available by using IIP concept. The main outcome is a prototype template of stock and flow data, geographically broken down by national/regional economies.

This means that observation of GFF has gone beyond mere theoretical research, and has entered

the stage of experiment and statistical application. In order to measure financial stress and observe the spillover effect of systematic financial crises through GFF and to observe the situation triggering an international financial crisis, research on establishing and analysis of GFF statistics is further needed. As a step toward this, this paper, firstly, sets out an integrated framework based on the BSA, using the accounts that are set in SNA which the BOP, IIP, the ROW account in the Flow of Funds accounts (FFA), and International Banking Statistics (BIS).

Secondly, the paper sets out and integrates the existing data sources for measuring GFF, which are available largely in the CDIS, CPIS, International Financial Statistics (IFS), IIP data, and BIS statistics with CBS, etc. There is also a need to set up GFF accounts to connect with the FFA in the SNA. This, however, requires additional external financial positions in the new data collection systems, as described above for Global Flow of Funds Statistics (GFFS) databases.

Thirdly, as an empirical analysis, the paper selects the U.S., Japan and China as the main observation objects, included the 13 countries to demonstrate how GFF is constructed using data available from various sources, because these three countries are three largest economies in the world, and have significant impact on the international financial markets. In addition, in January 2016, the State Administration of Foreign Exchange (SAFE) of China has released for the first time CPIS data and CBS data covering through the end of June 2015, the data released from China provide the possibility of international comparisons under the same statistical standards. The paper will demonstrate how sectors (subsectors) and specific instruments (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 could ideally be moved from aggregated subsector and instrument details towards disaggregated subsector and instrument details.

Lastly, this paper will use the established GFF matrix table to conduct an empirical analysis in order to investigate the fundamental observed facts of the U.S., Japan and China and explore the analysis method of GFF matrix. This may be an even more challenging task, given that the GFF data would need to be broken down by counterpart country, as relevant.