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G-20 Data Gaps Initiative II: Meeting the Policy Challenge

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I N T E R N A T I O N A L   M O N E T A R Y   F U N D

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**G-20 Data Gaps Initiative II: Meeting the Policy Challenge**

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**Abstract**

The G-20 Data Gaps Initiative (DGI), which aimed at addressing the information needs that were revealed by the 2007/2008 global financial crisis, concluded its first phase and started a second phase (DGI-2) with the endorsement of G-20 Finance Ministers and Central Bank Governors in September 2015. The DGI-2 recommendations maintain the continuity of DGI-1 but reflecting the evolving policy needs focus more on datasets that support the monitoring of risks in the financial sector and the analysis of the inter-linkages across the economic and financial systems. The paper presents the DGI as an overarching initiative, bringing together various statistical frameworks for a complete picture of the economic and financial system to support the work of policy makers.

Keywords: data gaps, financial interconnections, global financial crisis, cross-border interconnectedness, financial sector, surveillance, regulation

JEL Codes: E20, E44, F32, F34, G01, G15, G18, G20, G21, G22, G23, G28

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## Acronyms

| | |
|---|---|
| BCBS | Basel Committee on Banking Supervision |
| BIS | Bank for International Settlements |
| BSA | Balance Sheet Approach |
| CCP | Central Counterparties |
| CDIS | Coordinated Direct Investment Survey |
| CDM | Concentration and Distribution Measures |
| CDS | Credit Default Swaps |
| CGFS | Committee on Global Financial System |
| CPIS | Coordinated Portfolio Investment Survey |
| CPPI | Commercial Property Price Indices |
| DGI | Data Gaps Initiative |
| ECB | European Central Bank |
| EDTF | Enhanced Disclosure Task Force |
| e-GDDS | Enhanced General Data Dissemination System |
| EME | Emerging Market Economies |
| FMCBG | Finance Ministers and Central Bank Governors |
| FSAP | Financial Sector Assessment Program |
| FSB | Financial Stability Board |
| FSF | Financial Stability Forum |
| FSIs | Financial Soundness Indicators |
| G-20 | Group of 20 |
| GDDS | General Data Dissemination System |
| GDP | Gross Domestic Product |
| GFF | Global Flow of Funds |
| GFSR | Global Financial Stability Report |
| G-SIBs | Global Systemically Important Banks |
| G-SIFIs | Global Systemic Financial Institutions |
| IAG | Interagency Group on Economic and Financial Statistics |
| IAIS | International Association of Insurance Supervisors |
| IBS | International Banking Statistics |
| IIP | International Investment Position |
| IMF | International Monetary Fund |
| LEI | Legal Entity Identifier |
| OECD | Organization for Economic Co-operation and Development |
| OFCs | Offshore Financial Corporations |
| OTC | Over the Counter |
| PGI | Principal Global Indicators |
| RPPI | Residential Property Price Indices |
| SDDS | Special Data Dissemination Standard |
| SDDS Plus | Special Data Dissemination Standard Plus |
| SNA | System of National Accounts |
| TSR | Triennial Surveillance Review |

# I. Introduction

A widely accepted old lesson is that "Good data and good analysis are the lifeblood of effective surveillance and policy responses at both national and international levels[1]." Indeed, reliable, comprehensive and timely information is essential to assess the risks and vulnerabilities facing economies as policy making relies on a correct assessment of such risks and vulnerabilities.

In 2007/2008 the problems in the financial systems of a number of advanced economies, including the U.S., spilled across borders to affect the rest of the world. As the financial sector was at the center of the crisis, the G-20 economies supported a number of actions for the reform of the financial sector regulatory framework. Even though a lack of data was not the main reason for the crisis, it would have been possible to detect risk build ups had the right data been available at the right time. To this end, the identification and addressing of information gaps were among the action items for the reform of the financial sector leading to the G-20 Data Gaps Initiative (DGI). As the initiative is about to start its second phase, this paper explains how the DGI is meeting policy needs.

# II. Responding to Policy Needs: the DGI

## A. How the Evolution of Economic Thinking Over Time Affected Statistics

Recognizing the need to strengthen economic and financial data following a crisis is not new. As the economic and financial systems evolve as a consequence of market developments and financial innovation, information needs change. Looking back in history, crisis events have always acted as triggers to question the nature, quality, and availability of data needed for policy making.

The Great Depression of the 1930s is a good example of fundamental advances in economic statistics. As policy makers began to more actively manage the economy and particularly aggregate demand, the intellectual and policy focus came to be concentrated on demand and supply factors in the economy, and on transactions rather than stocks. As a result, the *System of National Accounts* (*SNA*), which still remains the overarching framework of macroeconomic statistics, was developed in late 1940s, and the first IMF *Balance of Payments Manual* was published around the same time.

The capital liberalization trend which started in the 1980s brought new opportunities for investment but also new risks and vulnerabilities, domestically and across border, leading to a

[1] See FSB/IMF Report on "Financial Crisis and Information Gaps," October 2009.

growing policy focus on financial stability.[2] These developments have necessitated a rethink of macro-prudential and monetary policies[3] and also the related statistical frameworks.

When the Mexican Crisis occurred in 1994/1995, international capital flows and a lack of relevant information were central. IMF responded with the establishment of two key standards for the dissemination of a core set of economic and financial data: the Special Data Dissemination Standard (SDDS) and the General Data Dissemination System (GDDS). The SDDS was intended for countries with access to international capital markets while the GDDS focused on countries that needed to develop their statistical systems.

In 1997/98 the Asian crisis revealed the need for better information on reserve and reserve related activities as forward sales of foreign currency contracts by the Bank of Thailand were seen as having masked the true pressure on international reserves. As a result, a Reserves Template was developed and the SDDS was strengthened by the addition of requirements on reserves and foreign currency liquidity data.

Due to the global imbalances and the associated discrepancies in income flows at the global level, the first IMF Coordinated Portfolio Investment Survey (CPIS) was launched at end 1997, to improve statistics of holdings of portfolio investment assets in the form of equity, long-term and short-term debt securities. The strengthening of Bank for International Settlements (BIS) International Banking Statistics (IBS) and the increasing adoption by countries of the *IMF's Balance of Payments Manual* has been prevalent throughout the past two decades.

## B. The Global Financial Crisis of 2007/2008 and the DGI

The financial crisis which started in 2007 with problems in the U.S. subprime market, spread to the rest of the world becoming the most severe global crisis since the Great Depression. One difference between the global financial crisis and earlier post-war crises was that the crisis struck at the heart of the global financial system spreading throughout the global economy. This required global efforts for recovery. As one element of the global response, in October 2009, the G-20 Finance Ministers and Central Bank Governors (FMCBG) endorsed a DGI led by the Financial Stability Board (FSB) Secretariat and the IMF Staff. DGI was launched as an overarching initiative of 20 recommendations to address information gaps revealed by the global financial crisis.

Since its launch, considerable progress has been made towards closing those gaps.[4] Given this progress, in September 2015, at its sixth year, the G-20 FMCBG closed the first act (DGI-1) and opened a second act of the DGI (DGI-2).

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[2] See "What has capital flow liberalization meant for economic and financial statistics?" IMF Working Paper WP/15/88.

[3] For example see the seminar series on "Rethinking macro policy," Seminar III available at http://www.imf.org/external/np/seminars/eng/2015/macro3/.

The success of the DGI is mainly attributable to a strong policy support, a common sense of ownership by the G-20 economies, and the close cooperation among relevant parties. The Inter-Agency Group on Economic and Financial Statistics (IAG)[5] has been acting as the global facilitator and coordinator of the exercise, liaising with other groups and initiatives. The IMF Staff has been monitoring the implementation of the DGI recommendations by G-20 economies on an annual basis and reporting, together with the FSB Secretariat, the progress made to the G-20 FMCBG. Six progress reports have been provided to the G-20 FMCBG since 2009.[6]

In 2009 many of the recommendations were written in aspiration as the implications of the crisis for regulatory and financial policy going forward were unclear. They were drafted following extensive consultations with compilers and users, including a users' conference in July 2009[7], and structured around four themes: build-up of risk in the financial sector, cross-border financial vulnerabilities, vulnerability of domestic economies to shocks, and communication of official statistics.

As time progressed, the implications of the crisis for regulatory and macro-prudential policy, and hence the data needs, have become more clearly established. Reflecting this, the DGI-2 recommendations focus on datasets that support the stability of the financial system both domestically and internationally. Nonetheless, as the 20 recommendations in DGI-1 have stood the test of time, DGI-2 represents an evolution and not a rethink of the DGI project. DGI-2 aims to strengthen and consolidate the progress made in DGI-1, achieve the potential for data provision embodied in the initiative, and promote high quality statistics for policy use (see Figure 1). The DGI-2 recommendations are set out in Annex 1.

The intention of this working paper is to demonstrate how DGI-2 is integral to meeting the emerging policy needs, both regulatory and macro-financial. To this end, the DGI-2 recommendations are more specific than those of DGI-1, with some identified as global priorities (see Figure 1) based on the consultations with users and compilers in 2015. G-20 economies are being asked to commit to nationally agreed action plans that take national circumstances into account but are based on the targets set for each recommendation. The objective is to advance the statistical agenda agreed with the G-20 economies and endorsed by G-20 FMCBG at the global level. This agenda is designed to help make national and international financial systems more stable in a world of increased financial interconnectedness.

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[4] See the "Sixth Progress Report on the Implementation of the G-20 Data Gaps Initiative," September 2015, http://www.imf.org/external/np/g20/pdf/2015/6thprogressrep.pdf.

[5] The IAG members are BIS, ECB, Eurostat, IMF (chair), OECD, United Nations and World Bank. The FSB is invited to participate in topics in which they have a direct involvement.

[6] Progress Reports of the G-20 Data Gaps Initiative are available at http://www.imf.org/external/ns/cs.aspx?id=290.

[7] Papers of the 2009 Users' Conference are available at http://www.imf.org/external/np/seminars/eng/2009/usersconf/index.htm.

An earlier working paper that set out the analytical justification for the DGI-1 recommendations remains relevant for DGI-2.[8]

**Figure 1. DGI Recommendations**

| DGI-I Recommendations | DGI-II Recommendations |
|---|---|
| **I.1:** Mandate | **II.1:** Mandate |
| **Build-up of risk in the financial sector** | **Monitoring risks in the financial sector** |
| **I.2:** Financial Soundness Indicators (FSI)<br>**I.3:** Tail risk<br>**I.4:** Aggregate Leverage and Maturity Mismatches<br>**I.5:** Credit Default Swaps (CDS)<br>**I.6:** Structured Products<br>**I.7:** Securities data | **II.2:** Financial Soundness Indicators (FSI)*<br>**II.3:** FSI Concentration and Distribution Measures (CDM)<br>**II.4:** Data for Global Systemically Important Financial Institutions (G-SIFIs)<br>**II.5** Shadow Banking<br>**II.6** Derivatives<br>**II.7** Securities Statistics* |
| **Cross-border financial linkages** | **Vulnerabilities, Interconnections, and Spillovers** |
| **I.8 &I.9:** Data for Global Systemically Important Financial Institutions (G-SIFIs)<br>**I.10&I.11:** Coordinated Portfolio Investment Survey (CPIS) and International Banking Statistics (IBS)Participation & Enhancement<br>**I.12:** International Investment Position (IIP)<br>**I.13&I.14:** Financial and Non-financial corporations' cross border exposures | **II.8:** Sectoral accounts*<br>**II.9:** Household Distributional Information<br>**II.10:** International Investment Position (IIP)<br>**II.11:** International Banking Statistics (IBS)*<br>**II.12:** Coordinated Portfolio Investment Survey (CPIS)*<br>**II.13:** Coordinated Direct Investment Survey (CDIS)<br>**II.14:** Cross border exposures of non-bank corporations<br>**II.15:** Government Finance Statistics (GFS)* |
| **Vulnerability of domestic economies to shocks** | **II.16:** Public Sector Debt Database (PSDS)* |
| **I.15:** Sectoral accounts<br>**I.16:** Distributional Information<br>**I.17:** Government Finance Statistics (GFS)<br>**I.18:** Public Sector Debt<br>**I.19**: Real Estate Prices | **II.17:** Residential Property Prices (RPPI)<br>**II.18:** Commercial Property Prices (CPPI) |
| **Communication of Official Statistics** | **Communication of Official Statistics** |
| **I.20:** Principal Global Indicators | **II.19:** International Data Cooperation and Communication<br>**II.20:** Promotion of Data Sharing |

Recommendations that are completed based on the targets that were introduced in 2014.
Recommendations where significant progress was made and are close to completion pending participation by all G-20.
Recommendations where progress was slow.
* Indicates priority areas identified by the G-20 economies and international agencies in 2015.

## C. Evolution of Policy Needs Following the Global Financial Crisis

*Regulatory Reform Agenda*

Following the global financial crisis, in 2008, the G-20 leaders, at their meeting in Washington,[9] committed to implement a fundamental reform of the global financial system to

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[8] See "Why are the G-20 Data Gaps Initiative and the SDDS Plus relevant for Financial Stability Analysis," IMF Working Paper 13/6.

[9] "Declaration Summit on Financial Markets and the World Economy, November 15, 2008," https://g20.org/wp-content/uploads/2014/12/Washington_Declaration_0.pdf.

strengthen financial markets and regulatory regimes so as to avoid future crises.[10] As part of the reform agenda, the FSB was established in April 2009 as the successor to the Financial Stability Forum (FSF) and started working as the central locus of coordination to take forward the financial reform program as developed by the relevant bodies. The obligations of members of the FSB were set to include agreeing to undergo periodic peer reviews, using among other inputs IMF/World Bank Financial Sector Assessment Program (FSAP) reports. The G-20 leaders noted the importance of global efforts in implementing the global regulatory reform so as to protect against adverse cross-border, regional and global developments affecting international financial stability.

The components of the G-20 regulatory reform agenda complement each other with an ultimate goal of strengthening the international financial system. The DGI has been an important element of this agenda as the regulatory reform agenda items mostly require better data. The collection of data on Global Systemically Important Banks' (G-SIBs) exposures and funding dependencies is among the steps towards addressing the "too-big-to-fail" issue by reducing the probability and impact of G-SIBs' failing. The FSB work on developing standards and processes for global data collection and aggregation on securities financing transactions aims to improve transparency in securitization towards the main goal of reducing risks related to the shadow banking system. Over-the-counter (OTC) derivatives markets including Credit Default Swap (CDS) were brought under greater scrutiny towards the main goal of making derivatives markets safer following the global crisis. DGI supported this goal by improving information in CDS markets. A number of other G-20 initiatives have strong links with the DGI project including the FSB work on strengthening the oversight and regulation of the shadow banking system; and on the work on global legal entity identifiers (LEI)[11] which contribute to the robustness of the data frameworks with a more micro focus. The changing global regulatory reforms particularly the implementation of Basel III was also taken into consideration in the development of the DGI.

*Surveillance Agenda*

The importance of closing the data gaps hampering the surveillance of financial systems was also highlighted as part of the IMF's 2014 Triennial Surveillance Review (TSR).[12] The 2014 TSR emphasized that due to growing interconnectedness across borders, financial market shocks will continue to have significant spillovers via both capital flows and shifts in risk positions. Also, new dimensions to interconnectedness will continue to emerge such as through

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[10] The G-20 leaders continue to reaffirm the importance of this commitment. For instance at the Antalya summit in November 2015, the leaders stated that "Going forward, we are committed to full and consistent implementation of the global financial regulatory framework in line with the agreed timelines…"

[11] A Global LEI system would uniquely identify parties to financial transactions.

[12] The papers contributing to the review, including the overview paper are available at http://www.imf.org/external/np/spr/triennial/2014/. The TSR involved wide consultation among IMF member countries, academia, and the private sector.

the potential short-run adverse spillovers generated by the financial regulatory reforms. To this end, the TSR recommended improving information on balance-sheets and enriching flow-of-funds data.

The IMF has overhauled its surveillance to make it more risk-based. To this end, the IMF Managing Director's Action Plan for Strengthening Surveillance following the 2014 TSR[13] underlined that the IMF will revive and adapt the Balance Sheet Approach (BSA) to facilitate a more in-depth analysis of the impact of shocks and their transmission across sectors, and possibly initiate the global flow of funds to better reflect global interconnections (Box 1). This work requires data from the DGI as it will help support the IMF's macro-financial work including in the key exercises and reports (i.e., Early Warning Exercise, FSAP, and GFSR).

**Box 1. Global Flow of Funds**

Through the use of internationally-agreed statistical standards, data on cross-border financial exposures (IBS, CPIS, and Coordinated Direct Investment Survey (CDIS)) can be linked with the domestic sectoral accounts data to build up a comprehensive picture of financial interconnections domestically and across borders, with a link back to the real economy through the sectoral accounts. This work is known as the "Global Flow of Funds (GFF)."[14] The GFF project is mainly aimed at constructing a matrix that identifies interlinkages among domestic sectors and with counterpart countries (and possibly counterpart country sectors) to build up a picture of bilateral financial exposures and support analysis of potential sources of contagion.

The concept of the GFF was first outlined in the Second Progress Report on the G-20 Data Gaps Initiative and initiated in 2013 as part of a broader IMF initiative aimed at strengthening the analysis of interconnectedness across borders, global liquidity flows and global financial interdependencies. In the longer term, the GFF matrix is intended to support regular monitoring of bilateral cross-border financial positions through a framework that highlight risks to national and international financial stability. IMF Staff is working towards developing a GFF matrix starting with the largest global economies.

*The DGI Project*

The DGI project has allowed for a broad range of users' needs to be incorporated into the development of economic and financial statistics. Wide user consultation took place as part of the DGI work process in 2015,[15] including through the Second IMF Statistical Forum which

[13] See http://www.imf.org/external/np/pp/eng/2014/112114.pdf.

[14] See "Mapping the Shadow Banking System Through a Global Flow of Funds Analysis," http://www.imf.org/external/pubs/ft/wp/2014/wp1410.pdf.

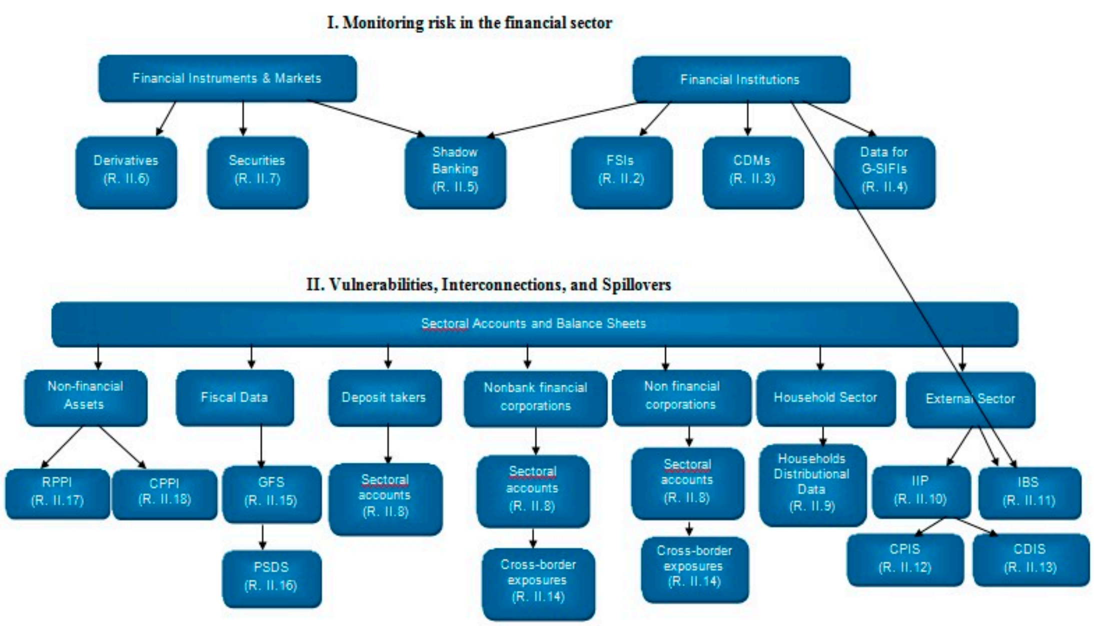
[15] Four regional conferences were held as well as meetings with private sector participants.

constitutes an annual global space where data users, data providers and policy makers can come together to discuss emerging needs for statistical information to inform policy making.[16]

The consultations with users indicated the need for ensuring completeness and comprehensiveness of data that support analysis of interconnections among economies. The importance of the balance sheet approach for understanding sectoral interconnections within the domestic economy was emphasized. Data that are key to assessing fiscal sustainability were agreed to be essential but challenges in implementation were also pointed out. As a result, key areas of focus that are common for G-20 economies were identified as disseminating consistent and comparable Financial Soundness Indicators, ensuring regular collection of the IBS and the CPIS, providing consistent securities statistics, improving the availability of sectoral accounts data, and disseminating timely and comparable general government operations and debt data.

The Second IMF Statistical Forum under the main theme of "Statistics for Policy Making-Identifying Macroeconomic and Financial Vulnerabilities," emphasized the importance of data quality and comparability; the need for monitoring interconnections and so the importance of sectoral accounts, balance sheets and international investment position (IIP) data; the need for better information on non-financial corporations, households as well as on real estate markets.

**Figure 2. Linkages Within the DGI-2 Recommendations**




Consequent to these developments DGI-2 has emerged with a focus on: (i) monitoring risk in the financial sector and (ii) vulnerabilities, interconnections and spillovers. As illustrated in

[16] The Second IMF Statistical Forum was held in the IMF Headquarters in Washington, D.C. during November 18–19, 2014. The proceedings of the forum are available at http://www.imf.org/external/np/seminars/eng/2014/statsforum/.

Figure 2, the recommendations in DGI-2 can mostly be clustered under these two broad headings. Further, the recommendations are presented as a coherent package that in their implementation create positive externalities for both compilation and analysis. The vulnerabilities, interconnections and spillovers category is based on the overarching national accounts system while the recommendations relating to monitoring risk in the financial system cover financial institutions and financial markets, with shadow banking straddling both institutions and markets, as explained below. All recommendations fit together to provide an overall picture of the economy and the financial sector.

## D. How Does the DGI Help Monitor Risks in the Financial Sector?

*Assessing the Soundness of the Banking System*

It has been recognized for some time that micro analysis of financial institutions needs to be complemented with a macro focus. To this end, the IMF's Financial Soundness Indicators (FSIs) were created earlier this century, and while backward looking, are an important component of macro-prudential framework for monitoring and assessing the health and soundness of the overall financial sector.[17] To date the main focus of the FSIs has been on the banking sector with additional indicators on banks' customers as well as on the markets that they operate in.

From the consultations with compilers and users in 2015, it is clear that FSIs are also increasingly being used by national authorities to establish national benchmarks, perform cross-country analyses, and construct early warning indicators. Such analyses are feeding into financial stability reports to inform policy making. Further, the IMF includes FSI data in the individual economy Article IV consultation reports and in the statistical annex of the GFSR. This policy related focus of FSIs both at the national and international level has helped encourage a significant increase in country coverage of FSIs reported to the IMF during DGI-1. At end-2015 over 100 economies reported FSI data to the IMF, including all G-20 economies, an increase from 45 economies in 2009.

However, to maintain the usefulness of FSIs as a tool for financial stability assessment, the list of indicators was updated in 2013 to reflect the changes in the financial environment, notably the increased prominence of nonbank financial institutions, and the global regulatory reforms, particularly the implementation of Basel III.[18] The latter revised the definitions of capital and introduced new measures of leverage, liquidity and funding all of which are reflected in the updated list of FSIs.

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[17] See for instance "Financial Soundness Indicators and Banking Crises," IMF Working Paper 13/263. https://www.imf.org/external/pubs/ft/wp/2013/wp13263.pdf.

[18] See the Executive Board Paper "Modifications to the Current List of Financial Soundness Indicators," November 2013. https://www.imf.org/external/np/pp/eng/2013/111313.pdf.

The updated list of FSIs for non-bank financial corporations aims to contribute to the analysis and assessment of the potential impacts of shadow banking sector on the stability of the financial system. Whereas the previous list only looked at the subsector as a whole, which comprise a very heterogeneous set of institutions, the new list includes separate FSIs for money market funds, insurance corporations, pension funds, and other non-bank financial institutions. New FSIs were also introduced for non-financial corporations and households.[19] DGI-2 will place greater emphasis on increasing the frequency and coverage of FSI reporting particularly for non-bank financial institutions (Annex 1, Recommendation II.2).

The crisis also highlighted the need for taking tail risks into account as a complement to the overall assessment of the financial sector risks through aggregate measures. To this end, to capture the system-wide disturbances that could be caused by the institutions that are at the tail of the distributions, aggregate FSI measures were enhanced by a pilot study on concentration and distribution measures (CDM). It was considered that expanding FSIs for the financial system with CDM would allow policy makers and Fund staff to better capture the performance of the financial sector with greater granularity and in a forward-looking manner.

The pilot project was completed in 2015 with the participation of 35 diverse countries.[20] CDMs were compiled for six FSIs of deposit takers: regulatory Tier 1 capital to risk-weighted assets, non performing loans to total gross loans, return on assets, return on equity, liquid assets to short-term liabilities, and capital to total assets.[21] The data provided important information that was not revealed by averages. For instance, the distributions of minimum values of CDMs[22] which represent the institutions with the most severe risks for any variable showed substantial variation across countries and over time within countries. The pilot project indicated that regular reporting of CDMs may be feasible and could be a useful tool for monitoring financial sector vulnerabilities. In DGI-2, the IMF will discuss the possibility of regular collection of CDM data. (Annex 1, Recommendation II.3)

Regarding the banking sector, the Bank for International Settlements (BIS) conducted conceptual work focusing on system-level measures of maturity mismatches (funding gaps) on banks' international balance sheets, based on BIS IBS.[23] The BIS's work pointed out that analysis of system-wide bank funding risks and the transmission of shocks across countries require geographically disaggregated data on banks' balance sheets to capture funding patterns that are location specific, and facilitate targeted assessments of vulnerabilities showing up in

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[19] See http://www.imf.org/external/np/sta/fsi/eng/fsi.htm.

[20] See forthcoming Working Paper "Pilot Project on Concentration and Distribution Measures for a Selected Set of Financial Soundness Indicators."

[21] The CDMs included the following indicators: (i) minimum, maximum, and mean; (ii) weighted standard deviations and skewnesses; and (iii) quartiles, and the asset share of the bottom quartile.

[22] Maximum values in the case of the NPL FSIs.

[23] See BIS Paper on "Bank structure, funding risk and the transmission of shocks across countries: concepts and measurement," 2010, http://www.bis.org/publ/qtrpdf/r_qt1009h.htm.

the aggregate data. This work helped inform the enhancements to the BIS IBS that were adopted during 2012–2015 thereby improving the usefulness of this dataset for the construction of maturity mismatch and leverage measures. The enhancements to IBS included improved information on the counterparty, residual maturity and currency breakdown of banks' international positions, with improvements made both to the residency-based and consolidated-based (using nationality-based supervisory concepts) statistics. DGI-2 will maintain emphasis on improving the IBS reporting of G-20 economies (Annex 1, Recommendation II.11).

*Monitoring the Shadow Banks*

Shadow banking system is defined by the FSB as "credit intermediation involving entities and activities outside the regular banking system." Such institutions could provide alternative sources of funding for the market participants in complement to traditional banking but could also carry bank-like risks. Those risks could easily spread through the rest of the system due to complex relationships among these institutions and banks, hence need to be monitored.

Typically, these institutions are highly leveraged and heavily reliant on short term funding while investing in long term illiquid assets and hence are exposed to liquidity and maturity risks. During the crisis when such risks materialized, the entire financial system suffered the consequences, thus emphasizing the importance of monitoring such risks.

At the 2011 Summit meeting in Cannes, the G-20 leaders asked the FSB to address the financial stability concerns associated with shadow banking. The FSB strategy has two elements.[24]

- First, the FSB initiated an annual global shadow banking monitoring exercise.
- Second, the FSB is working to develop policies to strengthen oversight and regulation of the shadow banking system.[25]

The FSB annual report covers 26 jurisdictions which, as of 2014,[26] constitutes 80 percent of global gross domestic product (GDP) and 90 percent of global financial system assets and is based on balance sheet data of national financial accounts. The annual reports are coordinated collection of data aggregated to a global level to allow for the analysis of global trends and risks in the shadow banking system. For the first time, the 2015 report introduced a new measure of shadow banking based on the economic functions of non-bank financial entities

[24] See "Strengthening Oversight and Regulation of the Shadow Banking: An Overview of Policy Recommendations," FSB August 2013.

[25] The progress on the FSB work on shadow banking is set out in the 2015 FSB Report: "Transforming Shadow Banking into Resilient Market-based Finance, Overview of Progress," http://www.financialstabilityboard.org/wp-content/uploads/shadow_banking_overview_of_progress_2015.pdf.

[26] FSB Global Shadow Banking Monitoring Report (November 2015), http://www.financialstabilityboard.org/wp-content/uploads/global-shadow-banking-monitoring-report-2015.pdf.

focusing only on those non-bank financial institutions that are involved in significant maturity/liquidity transformation or leverage, and are part of a credit intermediation chain. This allows policy makers to better focus on the potential risks shadow banking entities may pose. Based on this measure, the global assets of financial entities classified as shadow banking increased compared to 2014, reaching 36 trillion US dollars against the backdrop of a slight decline in banking system assets. Nonetheless, this is an initial estimate which is subject to change as the implementation of the methodology matures.

Regarding oversight and regulation of the shadow banking system, among the topics covered is that of risks in the securities lending and repo markets. The crisis pointed out that short-term deposit-like funding of non-bank entities can easily lead to "runs" in the market if confidence is lost. The use of these collateralized funding (secured financing) techniques can exacerbate such "runs" and boost leverage, especially when asset prices are buoyant and margins/haircuts on secured financing are low. Therefore, the FSB initiated work to collect and aggregate data on securities financing markets that is now incorporated in DGI-2. (Annex 1, Recommendation II.5) Collection of aggregated data for securities financing markets is intended to start in 2017, with the operational support of the BIS.

*Monitoring the Global Systemically Important Financial Institutions (G-SIFIs)*

Due to the significance of G-SIFIs in spreading shocks across borders and the potential effects of their failure for the global financial system, several measures were taken to improve the resilience of these institutions so as to limit the moral-hazard effects. Among these measures were the identification of G-SIBs in 2011 by the Basel Committee on Banking Supervision (BCBS) and the introduction of additional loss absorbency measures for such institutions. Having better data on the bilateral linkages of these institutions as well as their exposures to and funding dependencies on national financial systems was seen as an important prerequisite to understanding the risks associated with these institutions. To this end, the work to construct a data template for G-SIFIs as recommended by the DGI focused initially on G-SIBs.

The end product of this exercise, which was led by the FSB, in close consultation with the IMF, is a set of unique data templates bringing together consistent, granular information on G-SIBs which is useful for both micro and macro-prudential analysis. Collection of data started with information on G-SIBs' bilateral linkages as well as some aggregate information based on the institution-level data underlying the consolidated IBS and will continue with the collection of information on G-SIBs' exposures to and lending from 35 key economies with the granularity of a combination of sector, instrument, currency and maturity. The data are stored at the International Data Hub established at the BIS and currently shared among the data-providing national authorities.[27] This process in itself has reinforced the exchange of information and coordination among national supervisory authorities. However, given the granularity of the

[27] The sharing of reports based on G-SIBs' data with international financial institutions (BIS, FSB, and IMF) under strict confidentiality conditions has been agreed in principle.

dataset, it brings along confidentiality issues which need to be addressed in the longer term to make better use of this critical information.

The objective of the templates is to provide authorities with a clearer view of global financial networks and assist them in their supervisory and macro-prudential responsibilities.[28] Data on G-SIBs would support the IMF's work in safeguarding international financial stability including through effective multilateral and bilateral surveillance and the encouragement of coherent policy responses across member countries.[29] The data would permit bank-level information to be used in conjunction with measures of worldwide exposures, substantially improving the ability to detect vulnerabilities that could originate from common exposures/concentrated funding positions so deepening the understanding of the potential source of spillovers. G-SIBs data would also improve the tracking of banks' cross-currency funding and maturity transformation activities. In addition, the data would help to improve understanding of financial innovation, market complexity, and emerging sources of potential systemic risks.

Going beyond the banking industry, the FSB and International Association of Insurance Supervisors (IAIS) have also identified insurance companies of global systemic importance based on a methodology developed by the IAIS.[30] The assessment methodology relates to the methodology developed by the BCBS for G-SIBs but also takes into account the specific nature of the insurance sector. In particular, insurance groups that engage in non-traditional or noninsurance activities can be vulnerable to liquidity and market price risks amplifying or contributing to systemic risk.[31] Therefore, such non-traditional activities are included as an indicator in the assessment methodology. Following on from these regulatory developments, in DGI-2 the possibility of developing a common data template for global systemically important non-bank financial institutions starting with insurance companies will be investigated (Annex 1, Recommendation II.4).

*Understanding Financial Markets*

While being an important channel for financing of the real economy, securities markets have also been a key channel for risk transmission, particularly due to the increasing reliance on market-based financing. Therefore, there is consensus on the importance of better information on these markets to understand the diversification of funding sources and the exposures of both issuers and creditors, including the non-financial sector. Long important in advanced economies, there is evidence of growing security issuance in emerging market economies

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[28] See "FSB Data Gaps Initiative—A Common Data Template for Global Systemically Important Banks." May 2014.

[29] See "2014 Triennial Surveillance Review—Managing Director's Action Plan for Strengthening Surveillance," Page 3.

[30] Available at http://iaisweb.org.

[31] IAIS 2011, Insurance and Financial Stability, http://iaisweb.org/index.cfm?event=openFile&nodeId=34041.

(EME) as the composition of corporate debt has been shifting away from loans and toward bonds,[32] while it is estimated that over the past decade domestic debt securities markets in emerging market economies have increased from around one third of EME GDP to around one half.[33]

The DGI has addressed this growing policy interest in securities markets by providing conceptual advice through the publication of a *Handbook on Securities Statistics*[34] prepared jointly by the BIS, the European Central Bank (ECB), and the IMF; and by fostering improvements in securities statistics through encouraging G-20 economies to report to the BIS database on securities statistics.

Since 2009, the number of economies that report regular and consistent securities statistics to the BIS has increased significantly. Moreover, even though the levels of sophistication of national statistical frameworks are diverse among G-20 economies, they increasingly recognize the importance of having granular information on these markets hence are considering building security-by-security databases.[35] Data on securities issuance (and holdings) are also an input into national accounts, balance of payments, and government finance statistics. The initial focus of the DGI-2 is to improve data on issuance of debt securities with key information on the markets, sectors, currency, maturity, and interest rate. Consistent information on holdings of debt securities and from-whom-to-whom data is considered a longer term objective (Annex 1, Recommendation II.7).

The need to bring light to the opaqueness of the OTC derivatives markets is also a focus of the DGI. In DGI-1 CDS data were expanded both in detail and country coverage, and regular reporting of the expanded datasets was implemented. All economies with significant CDS markets report CDS data to the BIS survey including more detail on the type and geography of counterparties as well as underlying instrument.[36]

In DGI-2, there is recognition of the need to improve data on OTC derivative markets more broadly (Annex 1, Recommendation II.6). In September 2009, G-20 Leaders agreed to a comprehensive reform agenda to improve transparency in OTC derivatives markets, mitigate systemic risk, and protect against market abuse and asked the FSB and its relevant members to assess regularly its implementation. The objectives of this reform include reporting of OTC

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[32] IMF's *Global Financial Stability Report*, Chapter 3, October 2015.

[33] See "The role of debt securities markets,"Masazumi Hattori and Előd Takáts, November 2015, https://www.bis.org/publ/bppdf/bispap83c_rh.pdf.

[34] See *Handbook on Securities Statistic*, http://www.imf.org/external/np/sta/wgsd/hbook.htm.

[35] The BIS database on international debt securities, which has been developed based on granular information, allowing for the parallel identification of the residency and nationality of debt securities issuers, is an example of a security-by-security database constructed at the international level.

[36] BIS: Semiannual OTC derivatives statistics. http://www.bis.org/statistics/derstats.htm.

derivative contracts to trade repositories, trading of all standardized contracts on exchanges or electronic trading platforms, where appropriate, with clearing through central counterparties (CCPs). Non-centrally cleared contracts are subject to higher capital requirements. This regulatory initiative to clear OTC derivatives through central clearing allows for more standardization of reporting and aggregation both for regulatory and financial data purposes. In turn, these developments are also increasing the interest in the quality of reporting as well as the consistency among the already existing data collections.

## E. How Does the DGI Address the Surveillance Agenda?

As noted above, in the wake of the 2014 TSR the IMF Managing Director published an Action Plan for Strengthening Surveillance. Among the actions to be taken was that "The Fund will revive and adapt the balance sheet approach to facilitate a more in-depth analysis of the impact of shocks and their transmission across sectors." This responded to a call from outside experts David Li and Paul Tucker in their external study for the 2014 TSR on risks and spillovers.[37]

*Sectoral Analysis*

Even though the 2007/2008 crisis emerged in the financial sector, given its intermediary role, the problems in the financial sector also affected other sectors of an economy. To this end, analysis of balance sheet exposures is essential given the increasingly interconnected global economy. As it is pointed out in the IMF TSR 2014, the use of balance sheets to identify sources of vulnerability and the transmission of shocks, could have helped detect risks associated with European banks' reliance on U.S. wholesale funding to finance structured products.

In June 2015, the IMF set out the way forward in a paper for the IMF Executive Board on Balance Sheet Analysis in Surveillance.[38] Sectoral accounts and balance sheet data are essential, including from-whom to-whom data, in providing the context for an assessment of the links between the real economy and financial sectors. The sectoral balance sheets of the *SNA* is seen as the overarching framework for balance sheet analysis as the IMF Executive Board paper makes clear. Further, the paper sets out a data framework for such analysis.[39]

Putting the sectoral balance sheets of the *SNA* in a policy context, the IMF has developed a BSA, which compiles all the main balance sheets in an economy using aggregate data by sector. The BSA is based on the same conceptual principles as the sectoral accounts, providing information on a from-whom-to-whom basis with an additional focus on vulnerabilities arising from maturity and, currency mismatches as well as the capital structure of economic sectors.

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[37] See 2014 "Triennial Surveillance Review—External Study—Risks and Spillovers," July 2014 https://www.imf.org/external/np/pp/eng/2014/073014e.pdf.

[38] IMF: June 2015 "Balance Sheet Analysis in Fund Surveillance," http://www.imf.org/external/np/pp/eng/2015/061215.pdf.

[39] IMF: June 2015, "Balance Sheet Analysis in Surveillance," Paragraph 27, Page 23.

While currently not that many economies compile from-whom-to-whom balance sheet data, BSA data can be compiled from the IMF's Standardized Report Forms, IIP, and government balance sheet data—a more limited set of data than needed to compile the sectoral accounts.

The DGI-2 recommendations address key data gaps that act as a constraint on a full-fledged balance sheet analysis. The DGI recommends addressing such gaps through improving G-20 economies' dissemination of sectoral accounts and balance sheets building on *2008 SNA*, including for the non-financial corporate and household sectors. (Annex 1, Recommendation II.8) Given the multifaceted character of the datasets, implementation of this recommendation is challenging and progress has been slow. However, all G-20 economies agree on the importance of having such information and have plans in place to make it happen.

In a world of capital flow liberalization and fewer credit constraints, widening distributions of income, consumption, saving, and wealth can lead to potential financial vulnerabilities even if the aggregate data look reassuring. Indeed, the importance of good distributional data for households has become increasingly apparent over the recent years as policy interest in inequality has increased in both advanced and developing economies in recent decades.[40] DGI-2 focuses on the compilation of distributional information (such as information by income quintiles) to complement aggregate figures, consistent with national accounts. (Annex 1, Recommendation II.9) To this end, OECD has carried out conceptual work on distributional information focusing on (i) linking national accounts with distributional information (micro and macro data), summarized in two OECD Working Papers,[41] and (ii) the provision of an improved conceptual alignment of income, consumption and wealth in micro surveys, including a further enhancement of wealth definitions.

*Analysis of Fiscal Condition*

Significant data gaps also exist in the area of government finance statistics. The support provided by many national authorities to the financial sector following the global financial crisis, along with the onset of recession and fiscal stimulus programs to support demand, led to increases in fiscal deficits and government debt. However, consistent and comparable fiscal data across the G-20 economies was lacking, hampering cross-country analysis. Further, monitoring the trends in the fiscal position of government was often limited by a lack of frequent and timely harmonized data, including a lack of accrual-based data.

At the international level, there has been significant progress in support of the compilation of government finance statistics. Conceptual work has included publication of the *Government Finance Statistics Manual 2014* (*GFSM 2014*). Further, the IMF Executive Board began addressing the problem of government finance statistics in 2010, reaffirmed in 2013, by requiring the inclusion in staff reports of key elements of the *Government Finance Statistics*

[40] See IMF's work on Income inequality, http://www.imf.org/external/np/fad/inequality/index.htm.

[41] http://www.oecd.org/statistics/icw-framework.htm and http://www.oecd.org/statistics/guidelines-for-micro-statistics-on-household-wealth.htm.

*Manual* presentation.[42] The paper referenced in the previous footnote also confirmed the intention to establish a Government Finance Statistics Advisory Committee (GFSAC) to support the implementation of *GFSM* and advise on emerging fiscal data issues. The GFSAC met for the first time in March 2015 and agreed to support implementation of *GFSM 2014* with a number of practical recommendations.[43]

Despite these developments at the international level, progress has lagged behind other recommendations. This is due to factors such as the lack of coverage of state and local governments, the fact that GFS in many countries are not institutionally well established, and, in some instances, the reluctance of authorities to use statistical techniques to fill the data gaps.[44] To this end, the DGI-2 remains aimed at addressing the gaps in government finance statistics (Annex 1, Recommendation II.15).

Within the same context, information on the debt levels of the public sector, particularly general government, is crucial to assess the fiscal soundness of government. Under the DGI, the World Bank, OECD, and IMF launched a quarterly public sector debt statistics database in 2010 to promote standardized reporting by countries. However, the scope of sector and instrument coverage can differ significantly across countries. This is highly relevant because of the close analytical and policy interest in measures such as gross debt to GDP. If a country "only" covers debt securities and loans, for the budgetary central government, comparing these data with a country that covers all debt liabilities including accounts payable and pension obligations for the general government will clearly not be comparing like with like.[45] As a consequence, supported by DGI-2, the World Bank's public debt database is moving to a presentation of instrument and sectoral coverage on a matrix basis—presenting varying levels sector and instrument coverage from the narrowest to the broadest.[46] (Annex 1, Recommendation II.16).[47]

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[42] See "Review of the Implementation of Government Finance Statistics to Strengthen Fiscal Analysis," November 2013.

[43] See "Proceedings of the Meeting of the IMF Government Finance Statistics Advisory Committee (GFSAC)," http://www.imf.org/external/pubs/ft/gfs/gfsac/meetings/2015http.

[44] In addition, government finance statistics are not always consistent with the relevant data in the national accounts despite the harmonization of international standards across statistical domains.

[45] See "What Lies Beneath: The Statistical Definition of Public Sector Debt," IMF Staff Discussion Notes No. 12/09.

[46] See "Progress with Globally Comparable Public Sector Debt Statistics," a paper for the GFSAC, available at http://www.imf.org/external/pubs/ft/gfs/gfsac/meetings/2015/pdf/1515a.pdf.

[47] The BIS has published a dataset on credit to the general government sector for 26 advanced and 14 EME, *BIS Quarterly Review* September 2015, http://www.bis.org/publ/qtrpdf/r_qt1509g.htm.

*Understanding Cross-border Financial Interconnections*

The crisis emphasized the fact that it is not possible to isolate the problems in a single financial system as shocks propagate rapidly across the financial systems. Indeed, the IMF, since 2010, has been identifying jurisdictions with systemically important financial sectors based on a set of relevant and transparent criteria including size and interconnectedness. Within this identification framework, cross-border interconnectedness is considered an important complementary measure to the size of the economy: it captures the systemic risk that can arise through direct and indirect interlinkages among financial sectors in the global financial system (i.e., the risk that failure or malfunction of a national financial system may have severe repercussions on other countries or on overall systemic stability.[48]

The 2014 TSR summed up the issue succinctly in its Executive Summary: "Risks and spillovers remain first-order issues for the world economy and should be central to Fund surveillance. Recent reforms have made surveillance more risk-based, helping to better capture global interconnections. Experience so far also points to the need to build a deeper understanding of how risks map across countries, and how spillovers can quickly spread across sectors to expose domestic vulnerabilities."[49]

Four existing datasets that include key information on cross-country financial linkages are the IIP, BIS IBS, IMF CPIS and IMF CDIS. Together these datasets provide a comprehensive picture of cross-border financial interconnections. This picture is especially relevant for policy makers as financial connections strengthen across border and domestic conditions are affected by financial developments in other economies to whom they are closely linked financially. DGI-2 focuses on improving the availability and cross-country comparability of these datasets (Annex1, Recommendations II.10, 11, 12 and 13).

The well-known IIP is a key data source to understanding the linkages between the domestic economy and the rest of the world by providing information on both external assets and liabilities of the economy with a detailed instrument breakdown. However, the crisis revealed the need for currency and more detailed sector breakdowns, particularly for the other financial corporations (OFCs) sector. Consequently, as part of the DGI, the IIP was enhanced to support these policy needs. Significant progress has also been made in ensuring regular reporting of IIP along with the increase in frequency of reporting from annual to quarterly. By end-2015 virtually all G-20 economies reported quarterly IIP data.

The IBS have been a key source of data for many decades providing information on aggregate assets and liabilities of internationally active banking systems on a quarterly frequency. The CPIS data, while on an annual frequency, provided significant insights into portfolio

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[48] See IMF, 2010, "Expanding Surveillance to Require Mandatory Financial Stability Assessments of Countries with Systemically Important Financial Sectors," https://www.imf.org/external/np/sec/pr/2010/pr10357.htm.

[49] See 2014 "IMF Triennial Surveillance Review—Overview Paper," http://www.imf.org/external/np/pp/eng/2014/073014.pdf.

investment assets. That said, both datasets had limitations in terms of country coverage and granularity. CPIS also needed to be improved in terms of frequency and timeliness. To this end, the DGI supported the enhancements in these datasets.

The IBS was enhanced through (i) expanded coverage of banks' balance sheets to also include domestic positions in complement to cross-border activities, (ii) improved granularity of data by collecting more information on country and sector of banks' counterparties, in particular non-bank financial institutions. The enhancements to the IBS will provide users with a more comprehensive picture of the size and scope of internationally active banks' activities. Hence, it would enable a better analysis of the sources and uses of funds and the importance of international business for banks of different nationalities.[50]

The CPIS started to be collected on a semi-annual frequency from June 2013 with a dissemination lag of less than nine months.[51] By end-2015, all G-20 economies reported CPIS data to the IMF, of which 18 reported on a semi-annual basis. Further there is growing interest in understanding the sector allocation of holders and issuers, in order to match the sectoral analysis in the domestic accounts. At end-2015, 15 G-20 economies report sector of holder data, while among the enhancements made in the DGI were new encouraged tables for collecting information on the sector of the issuer of securities, also crossed with sector of the holder of securities. DGI-2 maintains the focus on improving CPIS reporting of G-20 economies.

The IMF's CDIS complements the CPIS and IBS for an analysis of cross-border interconnectedness as it provides information on direct investment positions broken down by net equity and net debt. The CDIS was brought under the DGI umbrella in its second phase with an aim to improve the quality of G-20 economies direct investment position statistics, both inward and outward.

Foreign currency risk is an important element of an analysis of cross-border interconnections. To this end, particular attention was given, including by the G-20 FMCBG,[52] to the improvement of foreign currency exposure information given the potential spillover effects of wealth transfers triggered by sharp movements in exchange rates. Within this context, the IMF focused on improving the compilation of foreign currency exposures data across its statistical domains, particularly through the IIP. The BIS contributes to the analysis of foreign currency exposures through its international debt securities, and its enhanced IBS which provides the basis for deriving a more detailed picture of internationally active banks' balance sheets and thus measuring potential currency mismatches more accurately.

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[50] *BIS Quarterly Review* September 2015, "Enhanced data to analyse international banking," http://www.bis.org/publ/qtrpdf/r_qt1509f.pdf.

[51] See Twenty-Fourth Meeting of the IMF Committee on Balance of Payments Statistics "Enhancements to the Coordinated Portfolio Investment Survey," 2011, https://www.imf.org/external/pubs/ft/bop/2011/11-12.pdf.

[52] See "2015 BIS/FSB/IMF Reports on Foreign Currency Exposures to the G-20," http://www.financialstabilityboard.org/wp-content/uploads/Work-on-Foreign-Currency-Exposures.pdf.

The global financial crisis also revealed the need to understand better the cross-border foreign currency exposures of nonfinancial corporations. The FSB/Committee on Global Financial System (CGFS)[53] identified the gaps in information on foreign currency exposures of corporations in a joint workshop in 2014, reporting the outcomes to the G-20 FMCBG. In addition, the FSB conducted in 2014 a peer review of the trade repository reporting of OTC derivatives, covering all types of OTC derivatives, including foreign currency derivatives and other instruments that create foreign currency exposures.[54] This work was also reported to the G-20. All in all, the DGI-2 supports this work on foreign currency exposures through more explicit incorporation of data on foreign currency exposures in the recommendations (i.e., IIP, cross border exposures of non-bank corporations, and securities statistics).

The increase in foreign exchange derivatives exposures of non-financial corporations through off-shore entities has been an area of concern, particularly for emerging market economies as authorities were unaware of the transactions recorded outside their jurisdictions. The DGI framework is contributing to shedding light on this broader area of cross-border exposures and intra-group funding by non-financial corporations through their off-shore subsidiaries (Annex 1, Recommendation II.14). Conceptual guidance was provided to clarify nationality, group and consolidation concepts in DGI-1[55] and going forward, BIS and IMF will continue to improve information on non-financial corporations cross-border exposures mainly drawing on their existing data collections. The OECD will also contribute through the development of a framework that links its multinational enterprises data with its' foreign direct investment data.

*Monitoring the Property Markets*

Residential and commercial property price indices are important for the detection and monitoring of asset price bubbles, the compilation of estimates of household and corporate wealth and capital formation, and assessing the broader financial stability implications. The relevance of property prices was stressed at the Second IMF Statistical Forum,[56] while work at the BIS has highlighted the importance of asset price developments—especially property prices—in driving the so-called financial cycle.[57]

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[53] The CGFS is the BIS committee of central banks overseeing the collection of the IBS statistics.

[54] The FSB elaborated more on the funding structures and incentives of non-financial corporate through its report to the G-20 on "Corporate Funding Structures and Incentives," in February 2015, http://www.financialstabilityboard.org/2015/09/corporate-funding-structures-and-incentives/.

[55] IAG Reference Document: "Consolidation and corporate groups: overview of methodological and practical issues," http://www.bis.org/ifc/publ/iagrefdoc-oct15.pdf.

[56] See "Real Estate Prices——Availability, Importance, and New Developments," http://www.imf.org/external/np/seminars/eng/2014/statsforum/.

[57] See "Assessing the risk of banking crises – revisited," Borio and Drehmann, BIS Quarterly Review March 2009 and "Measuring property prices: the BIS contribution" Christian Dembiermont, September 2015, https://www.bis.org/ifc/events/ifc_isi_2015/432_dembiermont_paper.pdf.

However, their availability and international comparability was limited before the global financial crisis. As part of the DGI-1, conceptual guidance was provided through the publication of *Handbook on Residential Property Price Indices* (*RPPI*),[58] and the BIS started in 2010 to disseminate real estate price statistics on its website. Currently, most G-20 countries provide data even though the data provided are often at a development stage and more work is needed to ensure consistency and international comparability.

Over the recent years the importance of good real estate price statistics has become increasingly clear to policy makers given the link with household consumption, and the need to monitor asset prices in an environment of accommodative monetary policies. Consequently, most of the G-20 economies have been increasing their efforts to develop good statistics on real estate prices. RPPI is one of the FSI indicators that are prescribed for adherents to the SDDS Plus. Good real estate price indices can also support the measurement of non-financial assets in the sectoral accounts.

Commercial Property Price Indices (CPPI) are at a less developed stage, both conceptually and in terms of availability of data. However, there is a financial stability interest in the dissemination of CPPI data for monitoring asset bubbles as commercial property is used for banks' collateralized lending; and CPPI data are important for the valuation of securitized assets. Therefore, work needs to be done to enhance the methodological guidance that is being developed and to encourage the provision of available data to the BIS for public dissemination.

In DGI-2 recommendations II.17 and 18 address the development of property place indices.

## F. The Need to Better Communicate Statistics

The DGI facilitated a new tier of the IMF's data standards (SDDS Plus) mainly intended for economies with systemically important financial systems to guide IMF member countries on the provision of economic and financial data to the public in support of domestic and international financial stability. Economies adhering to the SDDS Plus are expected to disseminate data in nine categories covering four macro-economic sectors—the real sector, the fiscal sector, the financial sector, and the external sector largely drawn from the DGI-1 recommendations. Given the common areas of focus, adhering to the SDDS Plus and implementation of DGI recommendations would contribute to each other. At the time of writing eight countries adhere to the SDDS Plus.

The IMF also continues to consider the needs of emerging markets and low income countries. The SDDS aims to enhance the availability of timely and comprehensive statistics and therefore contribute to the pursuit of sound macroeconomic policies and the improved functioning of financial markets. In May 2015, the GDDS was enhanced (e-GDDS) to assist countries with relatively less developed statistical capacity. The emphasis on data

[58] See *Handbook on Residential Property Prices Indices*, http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-RA-12-022. This *Handbook* was jointly supported by Eurostat, International Labour Organization (ILO), IMF, OECD, UN, and World Bank.

dissemination in the e-GDDS will support transparency, encourage statistical development, and help create strong synergies between data dissemination and surveillance. Going forward, IMF will continue working with member economies, including through capacity development activities, to ensure the availability and dissemination of information.

There was also a need to improve the communication of official statistics, as in some instances users were not fully aware of the available data series to address critical policy issues. As part of the DGI, the Principal Global Indicators (PGI) website[59], hosted by the IMF, was launched in 2009 as a joint undertaking of the IAG with an aim to facilitate the monitoring of economic and financial developments. The PGI website includes data for the G-20 economies and 14 non-G-20 members that have systemically important financial sectors and are subject to a five-year mandatory FSAP.[60] The PGI website was significantly enhanced as part of the DGI in terms of coverage and timeliness. It currently offers access to an on-line database with user-selected longer runs of historical data presented in comparable units of measure (growth rates, index numbers, and/or percent of GDP). Work to strengthen the PGI further will continue in DGI-2 (Annex 1, Recommendation 19).

As new risks emerge and relationships between institutions, sectors and countries get more complex, the granularity of data needed to assess those risks become relevant. This brings along the need for compilers of data to collect information at the micro level to help meet user demands. DGI recommendations (i.e., G-SIBs data, IBS, CPIS) support the need for more granular data.[61] On the other hand, the increasing granularity of data also raises challenges in sharing such information either within economies, across border and/or with international agencies due to confidentiality concerns. This potentially limits the broader benefits of new or existing data collections including some under the DGI. While this is not an easy problem to tackle, DGI-2 focuses on the issue of confidentiality by encouraging the G-20 economies to increase the sharing and accessibility of granular data, if needed by revisiting existing confidentiality constraints (Annex 1, Recommendation 20). Addressing the confidentiality constraints and how they can be overcome as part of the DGI-2 would be a positive step forward.

It is also worth noting that the private sector is working towards improving bank disclosures. To this end, the Enhanced Disclosure Task Force (EDTF), a private sector group of financial

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[59] http://www.principalglobalindicators.org.

[60] Currently, 29 IMF member countries are subject to mandatory financial stability assessments, while for the rest of the membership the "FSAP" is voluntary.

[61] Micro, granular data sources can also enhance the accuracy and level of details of "traditional" macro statistics. Tissot, Bruno, 2015, "Closing information gaps at the global level – what micro data can bring," https://www.bis.org/ifc/events/ws_micro_macro/tissot_paper.pdf .

institutions established by the FSB, released a report in 2012 that included seven fundamental principles for enhancing the risk disclosures of banks.[62]

The need for granular and real time data to understand interconnectedness and spillovers across countries and institutions was also emphasized at the Third IMF Statistical Forum held in Frankfurt in November 2015.[63] The participants urged statistical agencies and policy makers to establish new legal frameworks to support micro data access while preserving confidentiality.

### G. Broader Implications of the DGI

Even though the focus of the DGI has been the G-20 economies, it involves a wider range of economies as it builds on widely accepted international statistical frameworks. In particular, the methodological guidance provided as a result of the DGI is for all IMF member economies. Moreover, most recommendations of the DGI build on various statistical initiatives that involve a larger group of economies. Furthermore, as these non-G-20 member economies see the merit in this initiative for their own policy work, even without any higher level policy push such as the G-20 FMCBG, they work towards implementation of the DGI recommendations.

Evidently, improved quality of information worldwide is essential to ensure a complete assessment of global macro-financial linkages. With this in mind a reference note to the IMF paper on *Balance Sheet Analysis in Surveillance*,[64] provided a full listing of available balance sheet related macro datasets, including their relevance for surveillance, and a summary of data availability for each Fund member. Many of the datasets referenced were those covered by DGI-2. Further, the IMF Staff provides increasing support to member countries for the compilation of these datasets through technical assistance and training.[65]

## III. Conclusion

The DGI could be considered as an overarching initiative covering a wide range of statistical frameworks that are interlinked in support of the common goal of understanding financial markets and instruments, and shedding light on interconnectedness.

Making available a comprehensive set of information, as intended by the DGI, on a standardized, frequent and timely manner is not an easy task especially while also ensuring that the available data are reliable, of high quality, and properly reflect the changing economic circumstances. This cannot happen overnight but over time and with global effort it is possible.

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[62] The report focused on disclosures in risk governance and risk management, capital adequacy, liquidity and funding, market risk, credit risk and other risks. See "EDTF Principles and Recommendations for Enhancing the Risk Disclosures of Banks," October 2012, http://www.fsb.org/wp-content/uploads/pr_121029.pdf.

[63] http://www.imf.org/external/np/seminars/eng/2015/statsforum/.

[64] "Balance Sheet Analysis in Fund Surveillance—Reference Note," IMF July 2015, http://www.imf.org/external/np/pp/eng/2015/071315.pdf.

[65] See "IMF Statistics Department at a Glance," 2015, http://www.imf.org/external/np/sta/pdf/aglance.pdf.

It also requires high-level support, including resources to be secured. Since the global financial crisis, significant efforts have been made by all relevant parties to ensure that the policy makers have access to DGI-related information as a key component of their toolbox. Going forward, to be able to reap the benefits of the investments made in the DGI, it is important to maintain the pace of work and continue coordination among all players of the global economy.

## ANNEX 1. DGI-2 RECOMMENDATIONS

**Recommendation II.1:** Mandate of the DGI

*The G-20 economies to regularly compile comparable and high quality economic and financial statistics in accordance with international standards and disseminate such statistics in a timely manner. The IAG to coordinate and monitor the implementation of the DGI recommendations, and promote the PGI website as a global reference database. Staff of the FSB and IMF to provide annual updates on progress to G-20 Finance Ministers and Central Bank Governors.*

### MONITORING RISKS IN THE FINANCIAL SECTOR

**Recommendation II.2:** Financial Soundness Indicators

*The G-20 economies to report the seven Financial Soundness Indicators (FSIs) expected from SDDS Plus adherent economies, on a quarterly frequency. G-20 economies are encouraged to report the core and expanded lists of FSIs, with a particular focus on other (non-bank) financial corporations. The IMF to coordinate the work and monitor progress.*

**Recommendation II.3:** Concentration and Distribution Measures (CDM)

*The IMF to investigate the possibility of regular collection of concentration and distribution measures for FSIs. G-20 economies to support the work of the IMF.*

**Recommendation II.4:** Data for Global Systemically Important Financial Institutions (G-SIFIs)

*The G-20 economies to support the International Data Hub at the BIS to ensure the regular collection and appropriate sharing of data about global systemically important banks (G-SIBs). In addition, the FSB, in close consultation with the IMF and relevant supervisory bodies, to investigate the possibility of a common data template for systemically important non-bank financial institutions starting with insurance companies. This work will take due account of the confidentiality and legal issues.*

**Recommendation II.5:** Shadow Banking

*The G-20 economies to enhance data collection on the shadow banking system by contributing to the FSB monitoring process, including through the provision of sectoral accounts data. FSB to work on further improvements of the conceptual framework and developing standards and processes for collecting and aggregating consistent data at the global level.*

**Recommendation II.6:** Derivatives

*BIS to review the derivatives data collected for the International Banking Statistics (IBS) and the semi-annual over-the-counter (OTC) derivatives statistics survey, and the FSB to develop a mechanism to aggregate and share at global level OTC derivatives data from trade repositories. The G-20 economies to support this work as appropriate.*

**Recommendation II.7:** Securities Statistics

*G-20 economies to provide on a quarterly frequency debt securities issuance data to the BIS consistent with the* Handbook on Security Statistics *(*HSS*) starting with sector, currency, type of interest rate, original maturity and, if feasible, market of issuance. Reporting of holdings of debt securities and the sectoral from-whom-to-whom data prescribed for SDDS Plus adherent economies would be a longer term objective. BIS, with the assistance of the Working Group on Securities Databases, to monitor regular collection and consistency of debt securities data.*

**VULNERABILITIES, INTERCONNECTIONS, AND SPILLOVERS**

**Recommendation II.8:** Sectoral accounts

*The G-20 economies to compile and disseminate, on a quarterly and annual frequency, sectoral accounts flows and balance sheet data, based on the internationally agreed template, including data for the other (non-bank) financial corporations sector, and develop from-whom to-whom matrices for both transactions and stocks to support balance sheet analysis. The IAG, in collaboration with the Intersecretariat Working Group on National Accounts, to encourage and monitor the progress by G-20 economies.*

**Recommendation II.9:** Household Distributional Information

*The IAG, in close collaboration with the G-20 economies, to encourage the production and dissemination of distributional information on income, consumption, saving, and wealth, for the household sector. The OECD to coordinate the work in close cooperation with Eurostat and ECB.*

**Recommendation II.10:** International Investment Position (IIP)

*The G-20 economies to provide quarterly IIP data to the IMF, consistent with the* Balance of Payments and International Investment Position Manual*, sixth edition (*BPM6*), and including the enhancements such as the currency composition and separate identification of other (non-bank) financial corporations, introduced in that Manual. IMF to monitor reporting and the consistency of IIP data, and consider separate identification of nonfinancial corporations, in collaboration with IMF Committee on Balance of Payments Statistics (BOPCOM).*

**Recommendation II.11:** International Banking Statistics (IBS)

*G-20 economies to provide enhanced BIS international banking statistics. BIS to work with all reporting countries to close gaps in the reporting of IBS, to review options for improving the consistency between the consolidated IBS and supervisory data, and to support efforts to make data more widely available.*

**Recommendation II.12:** Coordinated Portfolio Investment Survey (CPIS)

*G-20 economies to provide, on a semi-annual frequency, data for the IMF CPIS, including the sector of holder table and, preferably, also the sector of nonresident issuer table. IMF to monitor the regular reporting and consistency of data, to continue to improve the coverage of significant financial centers, and to investigate the possibility of quarterly reporting.*

**Recommendation II.13:** Coordinated Direct Investment Survey (CDIS)

*G-20 economies to participate in and improve their reporting of the IMF Coordinated Direct Investment Survey, both inward and outward direct investment. IMF to monitor the progress.*

**Recommendation II.14:** Cross border exposures of non-bank corporations

*The IAG to improve the consistency and dissemination of data on non-bank corporations' cross-border exposures, including those through foreign affiliates and intra-group funding, to better analyze the risks and vulnerabilities arising from such exposures including foreign currency mismatches. The work will draw on existing data collections by the BIS and the IMF, and on the development of the OECD framework for foreign direct investment. The G-20 economies to support the work of the IAG.*

**Recommendation II.15:** Government Finance Statistics

*The G-20 economies to disseminate quarterly general government data consistent with the* Government Finance Statistics Manual 2014 *(*GFSM 2014*). Adoption of accrual accounting by the G-20 economies is encouraged. The IMF to monitor the regular reporting and dissemination of timely, comparable, and high-quality government finance data.*

**Recommendation II.16:** Public Sector Debt Statistics

*The G-20 economies to provide comprehensive general government debt data with broad instrument coverage to the World Bank/IMF/OECD Public Sector Debt Database. The World Bank to coordinate the work.*

**Recommendation II.17:** Residential Property Prices

*The G-20 economies to publish residential property price indices consistent with the Handbook on Residential Property Price Indices (RPPI) and supply these data to the relevant international organizations, including the BIS, Eurostat, and OECD. The IAG in collaboration with the Inter-Secretariat Working Group on Price Statistics (IWGPS) to work on a set of common headline residential property price indices; encouraging the production of long time series; developing a list of other housing- related indicators; and disseminating the headline residential property price data via the PGI website.*

**Recommendation II.18:** Commercial Property Prices

*The IAG in collaboration with the Inter-Secretariat Working Group on Price Statistics to enhance the methodological guidance on the compilation of Commercial Property Price Indices (CPPI) and encourage dissemination of data on commercial property prices via the BIS website.*

## COMMUNICATION OF OFFICIAL STATISTICS

**Recommendation II.19:** International Data Cooperation and Communication

*The IAG to foster improved international data cooperation among international organizations and support timely standardized transmission of data through internationally agreed formats (e.g., SDMX), to reduce the burden on reporting economies, and promote outreach to users. The IAG to continue to work with G-20 economies to present timely, consistent national data on the PGI website and on the websites of participating international organizations.*

**Recommendation II.20:** Promotion of Data Sharing

*The IAG and G-20 economies to promote and encourage the exchange of data and metadata among and within G-20 economies, and with international agencies, to improve the quality (e.g., consistency) of data, and availability for policy use. The G-20 economies are also encouraged to increase the sharing and accessibility of granular data, if needed by revisiting existing confidentiality constraints.*

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