



IMF Working Paper

Why are the G-20 Data Gaps Initiative and the SDDS Plus Relevant for Financial Stability Analysis?

Robert Heath

IMF Working Paper

Statistics Department

Why are the G-20 Data Gaps Initiative and the SDDS Plus Relevant for Financial Stability Analysis?¹

Prepared by Robert Heath

January 2013

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

Abstract

In the wake of the recent global crisis the international community is giving an increased focus on stability of the financial system, so-called financial stability analysis. With the increasing need for data sets to undertake this analysis, the question naturally arises as to what types of data are needed? While various data initiatives are underway, two initiatives at the forefront are: (1) the IMF/FSB G-20 Data Gaps Initiative (DGI) created by the international statistical community and endorsed by the G-20 Finance Ministers and Central Bank Governors as well as the IMF's International Monetary and Financial Committee, and (2) the new Special Data Dissemination Standard Plus (SDDS Plus), aimed particularly at economies with systemically important financial sectors. This paper explains the relevance of the DGI for financial stability analysis and the close link with the SDDS Plus. The importance of the SDDS Plus in promoting the dissemination to the public of a core set of data for financial stability analysis is emphasized.

JEL Classification Numbers: E44, F36, G15, G18, G20

Keywords: Global crisis, financial stability, data dissemination, sectoral accounts, cross-border linkages, government debt, financial institutions

Author's E-Mail Address: rheath@imf.org

¹ The author would like to thank Eugenio Cerutti, Robert Dippelsman, John Kiff, Andrew Kitili, Alfredo Leone, Yin-Fun Lum, Jisung Moon, Johan Mathisen, Martin Muhleisen, Yoko Shinagawa, and Richard Walton and members of the Inter-Agency Group on Economic and Financial Statistics, particularly Shaida Badiee, Remigio Echeverria, Paolo Poloni and Stefan Wredenborg for their helpful comments.

Contents	Page
Abstract.....	1
I. Introduction.....	3
II. Statistical Initiatives related to the Financial Surveillance Strategy.....	6
A. Understanding interactions between macro-prudential, macro-economic, and micro-prudential policies	6
B. Deepen the understanding of the nature and implications of cross-border linkages and spillovers.....	13
C. Implications of Regulatory Reform	19
D. Functioning and deepening of financial markets and access.....	21
III. Improving Communication of Official Statistics.....	24
IV. Conclusion	24
Table	
1. Stylized Overview of the 20 Recommendations.....	5
Annex	
I. List of Recommendations.....	26
References.....	29

I. INTRODUCTION

The tectonic plates of economic and financial market developments shift over time but invariably it is only when a crisis strikes that the magnitude of the shifts crystallize and the policy impetus to reassess and act on the scope and coverage of economic and financial datasets emerges. In the wake of the recent global crisis, the international community has responded in various ways, but primarily through the International Monetary Fund (IMF)/Financial Stability Board (FSB) G-20 Data Gaps Initiative² (DGI) that has been endorsed by the G-20 Finance Ministers and Central Bank Governors³ and the IMF's International Monetary and Financial Committee (IMFC). To coordinate the work among the international agencies, the IMF set up the Inter-Agency Group on Economic and Financial Statistics (IAG).⁴

This response has been the latest in a long tradition, stretching from the development of national accounts following the Great Depression, the development of international banking statistics data following the growth of the euro-dollar markets in the 1960s and 1970s, and the development of the data standards initiatives [Special Data Dissemination Standard (SDDS) and the General Data Dissemination System (GDDS)] following the Mexican financial crisis in the 1990s. The IMF's Data Reports on Observance and Codes (ROSCs) were also born in the early 2000s.

The global crisis reaffirmed that traditional residence-based economic and financial statistics remain as relevant as ever: GDP growth, domestic credit growth, current account positions, employment statistics, external debt, government debt and deficits, to name a few, remain central to any understanding of any economy and its economic and financial conditions and development. Also, the emphasis in the 1990s and early 2000s among the international community for comparability, consistency and quality of data within and across countries remains relevant⁵.

However, the global crisis has led to an increased policy focus on stability of the financial system with specialized committees created in some important economies to oversee this so-

² See <http://www.imf.org/external/np/g20/pdf/102909.pdf> and www.imf.org/external/data.htm#add.

³ The Communiqué of Finance Ministers and Central Bank Governors of the G-20, Mexico City, Mexico, November 4–5, 2012, states that “Recognizing the need for adequate statistical resources, we endorse the progress report of the FSB and the IMF on closing information gaps, and in particular look forward to the implementation of the data reporting templates for global systemically important financial institutions.” <http://www.g20mexico.org>.

⁴ The members of the IAG are the Bank for International Settlements (BIS), the European Central Bank (ECB), Eurostat, the IMF (Chair), the Organisation for Economic Co-operation and Development (OECD), the United Nations Statistics Division (UNSD), and the World Bank. This work is undertaken in consultation with the FSB.

⁵ Better information about the macro-economy, as evidenced by SDDS subscription, has a positive impact on capital inflows, namely portfolio and foreign direct investment. See “The Role of Risk and Information for International Capital Flows: New Evidence from the SDDS,” Yuko Hashimoto and Konstantin Wacker, IMF Working Paper (WP/12/242).

called “macro-prudential analysis.” Financial stability reports are now produced regularly by many countries as well as at the global level including through the IMF Global Financial Stability Report (GFSR). With these developments, there is an increasing need for data sets that meet this policy focus. While the crisis was not due to a lack of comprehensive data, a lack of data inhibited early warning and the timely response by policy makers once the crisis emerged, while the seizure of financial markets highlighted that nothing frightens financial markets more than uncertainly arising from a lack of information.

The global crisis and the increased focus on the stability of the financial system have also produced a convergence of interests between the traditional supervisory function and the macro prudential analysis. Around the mid 1970s, the set of financial data geared towards the supervision of individual institutions began to appear. While attempts were made by some data collection agencies to reconcile the micro and macro datasets for reporting purposes, some more successful than others, the analysis of the data was separate. Now the macro-prudential analysis increasingly requires granular data, while supervisors need to take more account of macro influences.

Against this background, the G-20 asked the FSB and the IMF to take forward their request to identify and close data gaps revealed by the global crisis. To meet this request, the IMF and the FSB undertook extensive consultation with users and compilers of data⁶ and produced a set of recommendations structured around four themes: build-up of risk in the financial sector, cross-border financial linkages, vulnerability of domestic economies to shocks, and improving communication of official statistics. The full list of recommendations is set out at the end of this paper; Table 1 provides an overview.

Subsequently, the IMF Executive Board has endorsed the introduction of the new tier of the data standards initiative—the SDDS Plus. The creation of the SDDS Plus is underpinned by the notion that there are economies that are endogenous to, that is are integral to the operation of the international monetary system, and there should be an international standard through which data that supports financial system analysis among such economies are publicly disseminated. For this reason the SDDS Plus draws significantly upon the G-20 DGI, as is evident from Table 1. In particular, those economies for which the IMF Executive Board has determined have a systemically important financial sector are encouraged to join the SDDS Plus.⁷ Disseminating key datasets to the public along with enhancing public disclosure of financial institutions data can improve the functioning of markets.

⁶ For instance the senior officials conference of July 2009, the papers for which are available at <http://www.imf.org/external/np/seminars/eng/2009/usersconf/index.htm>. Information on subsequent global conferences is available at <http://www.imf.org/external/data.htm>.

⁷ The IMF has made it mandatory for 25 jurisdictions with systemically important financial sectors to undergo financial stability assessments under the Financial Sector Assessment Program (FSAP) every five years. (<http://www.imf.org/external/np/sec/pr/2010/pr10357.htm>). These jurisdictions are Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Ireland, Italy, Japan, Luxembourg, Mexico, The Netherlands, Russian Federation, Singapore, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.

Table 1. Stylized Overview of the 20 Recommendations

	Conceptual/statistical framework needs development	Conceptual/statistical frameworks exist and ongoing collection needs enhancement
Build-up of risk in the financial sector	# 3 (Tail risk in the financial system and variations in distributions of, and concentrations in, activity) # 4 (Aggregate Leverage and Maturity Mismatches) # 6 (Structured Products)	# 2 [Financial Soundness Indicators (FSIs)]* # 5 (Credit Default Swaps) # 7 (Securities Data)*
Cross-border financial linkages	# 8 and # 9 (Global network connections and systemically important global financial institutions) # 13 and # 14 (Financial and Nonfinancial Corporations cross border exposures)	# 10 and # 11 [International Banking Statistics (IBS), and the Coordinated Portfolio Investment Survey* (CPIS)] # 12 [International Investment Position (IIP)]**
Vulnerability of domestic economies to shocks	# 16 (Distributional Information)	# 15 (Sectoral Accounts)* # 17 (Government Finance Statistics)* # 18 (Public Sector Debt)* # 19 (Real Estate Prices)*
Improving communication of official statistics		# 20 (Principal Global Indicators)

*SDDS Plus data component, **SDDS prescribed item.

The intention of this working paper is to demonstrate how the DGI, the SDDS Plus, and other related statistical initiatives, are helping to meet the emerging policy needs of financial stability, drawing on the analysis in the IMF's financial surveillance strategy.⁸ The papers and reports cited provide further examples of the analytical uses of the datasets discussed in this working paper. The expectation is that the paper will inform users as they frame their data needs for financial stability and inform data suppliers and compilers as to how the new and enhanced data sets fit with the newly emerging financial stability data needs.

⁸ See The IMF's Financial Surveillance Strategy (<http://www.imf.org/external/np/sec/pn/2012/pn12111.htm>). The strategy takes stock of the innovations and gaps in the IMF's financial surveillance during the past decade and proposes concrete and prioritized steps to further strengthen financial surveillance so that the Fund can fulfill its mandate to ensure the effective operation of the international monetary system and support global economic and financial stability. It was adopted by the IMF Executive Board in September 2012.

The paper does not provide a stocktaking of the progress made by countries in filling the gaps identified or meeting SDDS Plus requirements, as such information is, or will be updated elsewhere, such as for the DGI through the progress reports to G-20 Finance Ministers and Central Bank Governors.

II. STATISTICAL INITIATIVES RELATED TO THE FINANCIAL SURVEILLANCE STRATEGY

The IMF’s financial surveillance strategy is three-pronged: strengthen the analytical underpinnings of macro-financial risk assessments and policy advice, upgrade the instruments and products of financial surveillance to foster an integrated policy response to risks, and engage more actively with stakeholders in order to improve the traction and impact of financial surveillance.

This paper focuses on the first of these strategies—strengthen the analytical underpinnings of macro-financial risk assessments and policy advice—and four of the specific policy areas identified for in-depth analysis related to this strategy: understanding interactions between macro-prudential, macro-economic, and micro-prudential policies; deepening the understanding of the nature and implications of cross-border linkages and spillovers; assessing the implications of regulatory reform; and functioning and deepening of financial markets and access.⁹

A. Understanding interactions between macro-prudential, macro-economic, and micro-prudential policies

As explained in the IMF’s financial surveillance strategy, while macro-economic policies (monetary/exchange rate and fiscal) aim to achieve price stability and economic growth, and micro-prudential policies address idiosyncratic risk of individual institutions, the experience from the global crisis has demonstrated that financial stability cannot be assured without a macro-prudential approach. Such an approach targets systemic risks to, or stemming from, the financial sector. Various datasets emerging from the DGI recommendations support the intersection of analysis between the macro-prudential, macro-economic, and micro-prudential and so are relevant to policy makers in these fields.

The sectoral accounts provide an overview of the whole economy...

bringing together the current, capital, nonfinancial and financial accounts by economic sector, for both flows and stocks. This is the complete framework of the national accounts and is an immensely powerful analytical tool. In a few sentences it is not feasible to bring out

⁹ Some datasets explained below can apply to other specific policy areas in the financial surveillance strategy. For example; i) fiscal, monetary and financial, and sectoral account data can apply to “contain sovereign-bank feedback loop and prevent excessive global deleveraging;” ii) International Investment Position, Financial Soundness Indicators, and securities data can apply to “comprehensive, balanced, and flexible approach to managing capital flows;” and iii) monetary and financial, BIS’ IBS, and shadow banking data can apply to “the role and effectiveness of monetary policy.”

all the benefits of a fully integrated set of sectoral accounts.¹⁰ The sectoral accounts allow for the construction of many indicators of vulnerability that the global crisis highlighted. These include household debt to income, or the relative shift in activity of financial institutions, such as from banks to non-banks, while sectoral accounts also provides a tool for analyzing the link between the real and financial economies, a link that was highly potent during the global crisis. The relevance of this dataset is such that a sectoral balance sheet is one of the nine data categories¹¹ prescribed in the SDDS Plus¹².

While the sectoral accounts system has existed for some time, the global crisis, and its aftermath, demonstrated the need for an internationally coordinated effort to collect these data on a quarterly frequency. This work, under Recommendation 15 of the DGI, is now being actively taken forward by the IAG, and is being undertaken as countries implement the *System of National Accounts 2008 (2008 SNA)* or the new *European System of Accounts (ESA 2010)*.

Perhaps most significant is that there is a longer-term vision being developed out of these recommendations. Over time the idea is to extend the sectoral accounts to the so-called flow of funds from-whom-to-whom data, that is who holds whose financial instruments within the domestic economy and with the rest of the world. The link to the rest of the world comes through some of the datasets described ahead: International Investment Position (IIP), the BIS International Banking Statistics (IBS), the IMF's Coordinated Portfolio Investment Survey (CPIIS) and Coordinated Direct Investment Survey (CDIS).

The vision is ultimately to develop from-whom-to-whom data both domestic and across border. With consistent definitions and concepts used in the sectoral accounts and in the cross-border surveys discussed above, such data would prove very powerful analytical tool, and provide the link to the real economy. If successful the analyst would be able understand and analyze the financial linkages within sectors of an economy and with other economies. For example with information on the exposure of their banks to securities of nonbank financial institutions in another economy, if the latter run into trouble, the analyst could monitor how this event might affect the banks' balance sheets and the IIP, and then through the behavior of the banks how this event might impact other sectors in the domestic economy and the real economy. It is a vision with some ambition and a long way to go, but it is worth pursuing.

It is also worth noting that policy makers and those concerned with financial stability have a growing interest in the *well-being agenda*. This agenda focuses on the economic

¹⁰ For some benefits of a fully integrated system please see February 2011 conference, "Strengthening Sectoral Position and Flow Data in the Macroeconomic Accounts," <http://www.imf.org>. This conference was jointly sponsored by the IMF and OECD and was held in Washington, D.C.

¹¹ The data categories for the SDDS Plus are set out in Eighth Review of the Fund's Data Standards Initiatives, available at <http://www.imf.org/external/np/sta/dsbb/list.htm>.

¹² The SDDS Plus requires a minimum set of internationally comparable quarterly sectoral balance sheet data within one quarter.

circumstances of individuals: income, consumption, wealth, and quality of life. For instance the OECD has launched the “Better Life Initiative.”¹³ Not only are policy makers increasingly recognizing the need for inclusive growth policies, but the global crisis highlighted the potential vulnerabilities of the distributional effects of economic development. Looking at averages in the household sector may mask vulnerabilities at different income strata.

The OECD and Eurostat set up two expert groups in early 2011 with member country participation to look into the distributional information issue, and to address Recommendation 16 of the DGI. One group is investigating the measurement of disparities between the national accounts framework and micro household surveys, defining a common methodology and implementing pilot studies. The other group is to investigate the joint distribution of income, consumption, and wealth using existing national accounts and related data. While these data can be important for financial sector analysis, the development work is still at an early stage and so for this reason such data were not considered for inclusion in the SDDS Plus.

The government is a major player in any economy...

yet the global crisis and aftermath highlighted the rather surprising weakness of *government finance statistics*. In developing the Principal Global Indicators (PGI) website (see ahead), the only sector for which comparable data for at least a minimum set of economies were not initially available was government finance statistics. Further comparable cross country data on *government debt* were also lacking.

Indeed as has been evident in the aftermath of the crisis, in particular where fiscal dominance is significant, the perception of misleading or even just poor government finance data can have a significant negative impact on financial stability both in the country and other countries through spillover effects. Further, the often close ties between the government and the financial sector can lead to a negative sovereign-bank feedback loop: financial sector problems can lead to bailouts by government, and the financial sector can have large exposures to governments (such as through security holdings, often encouraged by regulatory policy) that are facing fiscal stresses. High and rising levels of government debt can lead to concerns over fiscal sustainability, growth, and broader issues of financial stability given the significant role government plays in an economy.¹⁴

Almost all governments have well-developed national budget data formats, but these have variations such as institutional coverage, classification, and consolidation, that can make international comparisons difficult. While the policy focus on government and public sector debt has greatly increased as a result of the crisis, national debt figures show differences because of several factors, including different consolidation methods, valuation, and institutional and instrument coverage. Users of data may not be fully aware that the partial

¹³ See www.oecd.org.

¹⁴ See for instance “Public Debt and Growth,” Kumar and Woo, IMF Working Paper (WP/10/174).

data to which they are accustomed are incomplete not least because of the terminology used to describe the data released.¹⁵

In some instances, governments appear reluctant to release comparable transactions data on a quarterly frequency and this, combined with an absence of comparable quarterly general government or more broadly public sector debt data, is a significant lacuna among economic and financial statistics.

Recommendation 17 of the DGI is focused on encouraging governments to disseminate general government finance statistics, based on a common framework, the *Government Finance Statistics Manual 2001 (GFSM 2001)*. The concepts underlying this framework are consistent with the sectoral accounts, so allowing comparability with the data for other sectors of the economy; one sector's surplus is another sector's deficit. IMF staff reports are now adopting a standardized presentation of fiscal data following the *GFSM 2001*.

Under Recommendation 18 of the DGI, the World Bank, in cooperation with IMF and OECD, is hosting public/government sector debt data for multiple countries, so providing debt data in a single convenient place and format, following the approach used for the external debt data and the PGI databases.¹⁶ These data are consistent in approach not only with the sectoral accounts but also with the external debt statistics, so the government's external debt forms one part of the larger picture of an economy's external debt.

The IMF Executive Board has recognized the importance of comprehensive and frequent government operations and debt data for monitoring and assessing the fiscal performance by prescribing quarterly general government operations and general government gross debt data in the SDDS Plus on a quarterly frequency.

Cross-border developments can impact the economy in various ways...

so the new edition of the *Balance of Payments and International Investment Position Manual (BPM6)* gives an equal focus to the *International Investment Position (IIP)* as to the traditional balance of payments transactions accounts.

The equal focus on the stock and flows (transactions, revaluations, and other changes in volume) in *BPM6* highlights another important story—the need to reconcile stocks and flows. While the traditional focus has been on transactions, and particularly the current account balance, the recent global crisis highlighted the role of valuation changes, particularly foreign security prices, in transmitting the crisis across border.

¹⁵ Dippelsman, Dziobek, Gutierrez Mangas, 2012 “What Lies Beneath: The Statistical Definition of Public Sector Debt,” IMF Discussion Note SDN/12/09 . This paper shows that the absence of a standard nomenclature can lead to major misunderstandings in the fiscal policy debate. The authors present examples that show that debt-GDP ratios for a country at any given time can range from 40 to over 100 percent depending on the definition used.

¹⁶ The database can be accessed at web.worldbank.org.

Further, the structure of the IIP, combined with its currency composition (a core element of the IIP in *BPM6*) data can give warning signs of vulnerability, such as growing foreign currency debt exposures of nonfinancial corporations, and rising short-term debt, and help estimate the likely impact of a currency appreciation or depreciation on the net external position.¹⁷ Bilateral cross-border position data such as from the BIS IBS, CPIS and CDIS can provide information to policy makers on the “upstream” and “downstream” exposures (see section B for more details).¹⁸

In short, the channel through which the growing exposures to the rest of the world will primarily affect the domestic economy is the IIP, be it through transactions, either current or financial account, or valuation, through changes in market prices and exchange rates, or other flows, such as debt write-offs. There are clear analytical benefits in using the integrated system of stocks and flows to understand which sectors gain and which sectors lose value during a financial crisis, and how the loss in value is funded.¹⁹ As with government finance statistics, the concepts underlying the IIP are the same as for the sectoral accounts.

The IMF is working closely with countries to increase the number of IIP reporters, particularly on a quarterly frequency. Recent years have seen a sharp jump in such reporters, but more work is needed to incorporate the enhancements in *BPM6*, including currency composition information and the identification on nonbank financial institutions (Recommendation 12 of the DGI). The importance of quarterly IIP data is increasingly recognized by countries, and by the IMF Executive Board in prescribing quarterly IIP in the SDDS, with a transition date until September 2014.

Domestic monetary conditions are relevant for macro-prudential and macro-economic policy makers...

so *monetary and financial statistics* have been and continue to be an integral dataset of macro-economic statistics. Well developed in many economies, their link to the DGI comes through their input into the Balance Sheet Approach²⁰ in Recommendation 15 of the DGI. Increasingly these data are directly relevant for macro-prudential analysis. Work at the BIS has demonstrated that a sharp growth in the credit to GDP ratio in a country can be a leading indicator of banking crisis,²¹ while data on credit to individual economic sectors can provide warning of emerging risks and vulnerabilities, not least if the borrowing is foreign currency denominated. Furthermore, work on measuring global liquidity, drawing on but beyond the

¹⁷ See “Data Requirements from Users on the International Investment Position” Robert Heath, IAOS Conference, Shanghai, 2008.

¹⁸ See “Enhancing Surveillance: Interconnectedness and Clusters,” IMF March 2012.

¹⁹ For example, see “Indonesia’s Banking Crisis: A New Perspective on \$50 Billion of Losses,” Olivier Frecaut, Bulletin of Indonesian Economic Studies, Volume 40, Issue 1 2004.

²⁰ The Balance Sheet Approach provides information on sectoral linkages and balance sheet mismatches.

²¹ Borio, Claudio and Drehmann, Mathias, “Assessing the Risk of Banking Crises—Revisited,” March, 2009.

traditional monetary aggregates, is underway at the IMF and BIS, to help policy-makers assess better the build-up of risks in and the performance of the financial system.

At the present time, the IMF Statistics Department is updating the *Monetary and Financial Statistics Manual (MFSM)* and the update will take account of the growing financial stability needs, not least with regard to: globally-agreed measures of, money, credit and liquidity; nonbank financial institutions and the links between these institutions and deposit-takers; and the links to flow-of-funds and financial balance sheets.

The SDDS prescribes data on the analytical accounts of both the banking sector and the central bank. Because of the growing importance of the subsector for financial stability analysis, the SDDS Plus prescribes data on the nonbank financial institutions sector, with coverage following the *MFSM* guidelines.

The soundness and health of financial institutions needs monitoring

In the late 1990s, as it became clear that data to monitor the system-wide strength of the financial sector and its customers were not available, the international community started the project on *financial soundness indicators* (FSIs). In short, the question asked was how risky is the financial sector on a system-wide basis as measured by standard supervisory measures?

The FSI indicators developed cover capital adequacy, asset quality, earnings and profitability, liquidity, and sensitivity to market risk, and inevitably are largely drawn from supervisory statistics, with definitions, including consolidation, based on supervisory standards which are not always comparable across countries. So this dataset, one of the first to be developed specifically to meet financial stability policy needs, brought financial statisticians into contact with supervisors and supervisory-based data.

The regular reporting by countries of FSIs to the IMF was up and running around the time the global crisis struck. A web-based database is available on the IMF website covering over 70 economies (see <http://fsi.imf.org>); FSI data for over 100 countries for selected FSIs are linked to the GFSR; and increasingly a table of FSIs is included in IMF Article IV reports.

The general consensus is that FSIs, although backward looking, are good indicators of current developments and essential to monitoring the current health of the financial sector.²² FSI analysis using systematically collected and disseminated data are suited to flag issues for follow-up, not only on individual institutions (micro-prudential) but also on aggregate for systems (macro-prudential). In the wake of the global crisis, there is a need to review the list, particularly in the context of Basel III and with regard to nonbank financial institutions, encourage more countries to provide FSIs, and promote quarterly reporting (Recommendation 2 of the DGI). This work is underway.

²² The full list is available at <http://fsi.imf.org/> with the link to the “concepts and definitions” document.

The IMF Executive Board has recognized the need for countries that intend to adhere to the SDDS Plus to provide a set of core FSIs, including residential real estate prices.²³ Further, while the consolidation approaches are not always identical, there does appear scope for more cross-dataset analysis between monetary and FSI data. For instance, the linkages that could be explored include that between credit growth and capital ratios, and between credit growth and nonperforming loans to gross loans, and return on assets. Such cross-exploration is an avenue that financial stability analysts may find increasingly fruitful to explore. It would directly link macro-economic, micro-prudential, and macro-prudential analysis, and could help in the assessment of the interaction between monetary and macro-prudential policies.

One drawback of FSIs has been the lack of cross country comparability. This is an issue which is being addressed in the updated *FSI Compilation Guide*. But the inclusion of FSIs in the SDDS Plus could also be seen as an opportunity to enhance comparability of key FSIs across countries as a medium-term objective.

Within the context of the FSI work, the crisis also threw up concern over tail risks. As occurred in some economies, institutions at the tail of a distribution, because of the manner in which they are connected to the rest of the financial system, or because of the type of market or markets they are in, or simply their size, caused system-wide disturbances when they failed. Thus, Recommendation 3 of the DGI promotes work on getting a better handle on tail risks, with the intention of strengthening the monitoring of the financial sector through FSIs. The initial work on this recommendation has been of a conceptual nature.²⁴

Real estate developments can have economy-wide implications...

yet despite the central role of real estate property to financial and economic developments, remarkably, reliable data on *real estate prices* are often lacking, both residential and commercial prices. The relevance for financial stability analysis is self-evident as an exposure to property prices has been a common factor in many financial sector crises over many years, while property prices are also increasingly relevant for macroeconomic policy because of the direct and indirect links to economic growth through consumption and the wealth effect. Valuation of nonfinancial assets is also an important component of sectoral balance sheets, not least for the household sector.

²³ This core set is: Regulatory Tier 1 capital to risk-weighted assets, regulatory Tier 1 capital to assets, nonperforming loans net of provisions to capital, nonperforming loans to total gross loans, return on assets, liquid assets to short-term liabilities, and residential real estate prices.

²⁴ See Taleb, Canetti, Kinda, Loukoianova, and Schmieder, “A New Heuristic Measure of Fragility and Tail Risks: Application to Stress Testing,” IMF Working Paper (WP/12/216).

The international community led by Eurostat has produced an internationally agreed methodology for compiling residential real estate prices,²⁵ and similar work has started on commercial real estate prices.²⁶ The BIS is collecting data on real estate prices from central banks and re-disseminating the data on their website, and the European Central Bank is publishing residential property prices (Recommendation 19 of the DGI).²⁷ As noted above, residential real estate prices are prescribed within the list of FSIs included in the SDDS Plus.

B. Deepen the understanding of the nature and implications of cross-border linkages and spillovers²⁸

It is clear that the world has become increasingly interconnected. That is a message transmitted loud and clear during the global crisis and its aftermath. Policy makers need to understand these cross-border interconnections and explore them from various perspectives. This includes analyzing interconnections between countries that are in the same cluster of closely interconnected financial economies.

This interest is not new. Trade linkages have long been monitored, such as the IMF's data on *Direction of Trade Statistics*, while in the late 1990s the idea of common financial creditors was discussed; in Asia, Japanese banks, and in Latin America, U.S. banks. However, the last decade has taken the interconnections to a new level. The extent of the trade and financial links across border turned out to be deeper and more firmly established than most were aware. Bond holdings across border are more prevalent, equity prices more correlated, financial contagion across borders more apparent, while trade supply lines (and economic growth) can be significantly disrupted by events.

In short, the breadth and depth of cross-border linkages, financial in particular, took many policy makers by surprise. That the collapse of a single large institution like Lehmans could have such worldwide consequences on economic activity was totally unforeseeable.

In looking at cross-border linkages, in addition to the traditional focus on resident-based data, to undertake appropriate risk analysis, data on a consolidated basis are needed. This is because in the financial world, the activities of financial institutions cross borders, create legal entities in other economies and, to varying extent, run operations of the group as a whole. Among economic and financial statistics, the two sets that are most prominent in the use of consolidated data are the BIS' IBS and the FSIs.

²⁵ Eurostat, "Handbook on Residential Property Prices Indices," November 2011—Draft <http://epp.eurostat.ec.europa.eu>.

²⁶ Work commenced in 2012 on the development of a *Handbook on Commercial Property Price Indicators* with a conference hosted by the ECB. See http://www.ecb.int/events/conferences/html/20120511_cppei.en.html.

²⁷ Experimental data based on non-harmonized national sources. For further details see www.ecb.europa.eu/stats/intro/html/experiment.en.html.

²⁸ The IMF is increasing its surveillance of outward spillovers. See "IMF Connects Dots in Spillover Analysis of Major Economies," (<http://www.imf.org/external/pubs/ft/survey/so/2011/CAR090211B.htm>).

The definition of consolidation can differ. Unlike residence which is clearly defined and agreed among economic and financial statisticians, consolidation can be defined in many ways. As an example the *Financial Soundness Indicators Guide* has six different definitions of consolidation (see <http://fsi.imf.org>), while the definition of consolidation in the BIS's IBS data, focusing on the banking sector, is different from that typically used in banking supervision, which consolidates activities across economic sectors.

The consequence is that the international comparability of data, not least across datasets, does not presently exist, and there is a strong need for metadata—information about data—so the definitions used to compile consolidated data are clear to the user. The Irving Fisher Committee on Central Bank Statistics held a workshop in early 2011 to discuss the concept of consolidation, and brought out a working paper laying out the alternative concepts in 2012.²⁹

As consolidated-based data develops, as with the residence-based data, it would be more powerful analytically if there is consistency in approach. For instance, if the consolidation approach for the new datasets for Global Systemically Important Financial Institutions (G-SIFIs) was the same as for FSIs, then not just the exposures of G-SIFIs could be considered but also their soundness, bringing an additional depth of analysis. The same holds for comparisons between the consolidated IBS and FSI data.

Interest in consolidated-based data is growing, not only in the financial sector but also the nonfinancial sector. Indeed, one experience from the global crisis that surprised many policy makers, particularly in emerging markets, was the way in which domestic nonfinancial corporations set up offshore entities that took on debt liabilities without the knowledge of the authorities. Then when the crisis struck, these liabilities came onshore. This concern of policy-makers underlies Recommendation 13 in the DGI.

In addition to the discussion on non-bank financial corporations, the DGI includes a number of recommendations intended to improve the availability of data on cross-border linkages.

Global Systemically Important Financial Institutions (G-SIFI) are a special class of institution...

as the global crisis and its aftermath revealed. These institutions fall into the “too-big-to-fail” category, dominating global financial markets.

Monitoring G-SIFI activity is necessary for global financial stability purposes, as the global crisis demonstrated that when these institutions get their investment strategy wrong it has global economic and financial repercussions. This global reach has been recognized by the Basel Committee on Banking Supervision (BCBS) in requiring additional capital for the list of Globally Systemically Important Banks G-SIBs that the BCBS has defined. The G-20

²⁹ Irving Fisher Committee Working Paper 9, April 2012 “Residency/ Local and Nationality/ Global Views of Financial Position.”

Finance Ministers and Central Bank Governors have endorsed this approach as part of a comprehensive framework to reduce the risks posed by G-SIFIs.³⁰

As articulated in an IMF staff policy position note³¹ the global crisis revealed a lack of consistent and comparable data on these institutions' exposures to national markets and sectors. Published bank level data are neither sufficiently granular nor comparable across countries. On the other hand, analyzing systemic risks in international banking, and taking a global view of interconnections requires granular data at the individual bank level, as common exposures to a particular assets class or funding source are easily masked in aggregate data.³²

It became evident during the crisis that supervisors and macro-prudential analysts were unaware of the linkages between G-SIFIs not least because of the different nationalities of institutions involved. These concerns prompted the work of the FSB working group on recommendations 8 and 9 in the DGI.³³

Templates are being developed to address these limitations. The institution-to-institution (I-I) template essentially provides data on the bilateral counterparts of G-SIFIs. This builds on an existing supervisory arrangement, and is intended to help identify common exposures and funding risks. The data will support the work of the BCBS on risk concentration.

The institution to aggregate data (I-A) template essentially provides information on G-SIFIs exposures to countries, sectors and instruments. The data are to be captured on a consolidated basis with counterparty data on both an immediate (residence-based) and ultimate risk basis. Like other initiatives, it is building on existing frameworks, such as the BIS's IBS model, as far as possible but with increased granularity.

Once final decisions are made on the templates by the FSB Plenary, they will be phased in over the next 2 to 3 years. While the focus initially is on global systemically important banks, at a later stage global systemic non-banks will also be considered for coverage under this initiative.

³⁰ See the Communiqué of Finance Ministers and Central Bank Governors of the G-20, Paris, France, October 14–15, 2011 (http://www.g20.org/pub_communiques.aspx).

³¹ See “Addressing Information Gaps,” Johnston, R. B.; Psalida, L. Effie; De Imus, Phil; Gobat, Jeanne; Goswami, Mangal; Mulder, Christian B.; Vázquez, Francisco F., IMF Staff Position Note No. 2009/06, (<http://www.imf.org/external/pubs/cat/longres.aspx?sk=22824.0>).

³² See “Systemic Risks in Global Banking: What available data can tell us and what more data are needed?” Eugenio Cerutti, Stijn Claessens, and Patrick McGuire, IMF Working Paper (WP/11/222).

³³ A consultation paper on the draft proposals is available at www.financialstabilityboard.org.

International banking statistics are essential to understanding cross-border financial linkages...

and so the BIS's IBS long standing data collection of cross border international banking positions have been used by policy makers and other analysts for many decades. There are two main sets, residence based and consolidated data (<http://www.bis.org/>). In the wake of the global crisis, the BIS and its member central banks have seen the need to strengthen these datasets, not least by providing a stronger link between the two datasets.

In enhancing the residence based data by asking for a more detailed breakdown of the residence data by nationality of banks (e.g., the separate positions of Germany, UK, U.S., and other banks in France), the BIS can build up a comprehensive picture of international banking not only from a global consolidated nationality viewpoint but also from a residence viewpoint.

What is the need? Because different structures of banking activity can result in differing reactions of banks to shocks, with feedbacks to both home and host economies. In the crisis it became clear that banks of a certain nationality or nationalities based in one country might undertake operations, such selling local currency and buying dollars, due to events in other parts of the organization and not due to local circumstances. Or, local banks in a group can be differently affected if they are funded largely by local deposits or by borrowing from their parent or other entities with the group. In addition some host supervisors might limit the extent to which local subsidiaries can transfer funds back to their parent. So both location and nationality, matter.³⁴

The BIS and member central banks are strengthening both residence and consolidated -based data with more granular sectoral, instrument, and other breakdowns, with instruments and sectors consistent with national accounts definitions. The enhancements are expected to be reflected in the IBS data over the coming few years, and, inter alia, should support efforts to better monitor maturity and currency mismatches among international banks. These enhancements help address Recommendation 11.

Among the enhancements is a more detailed breakdown by sector, including the identification of non-bank financial institutions. This will allow a better understanding of the linkages between banks and nonbank financial corporations, not least help in identifying their funding sources. With more information on the cross-border portfolio investments of such institutions (see the CPIS ahead), and on domestic investments through the sectoral balance sheet information, a better picture of the funding and investment strategies of nonbank financial institutions, not least those in the advanced countries, should emerge.

³⁴ For instance, see "Towards a Global Risk Map," Stephen G Cecchetti, Ingo Fender, and Patrick McGuire, BIS Working Paper No. 309, and "Systemic Risks in Global Banking: What available data can tell us and what more data are needed?" Eugenio Cerutti, Stijn Claessens, and Patrick McGuire, IMF Working Paper (WP/11/222).

During the global crisis some financial institutions were exposed with little capital to cover losses, as they had increased leverage to boost profitability. As work at the BIS has shown, before the crisis there was evidence of institutions borrowing in the short-term wholesale markets to fund long-term positions, in foreign currency.³⁵ The drying up of liquidity in dollar markets, in particular, caused severe financial strains in European banks that were only resolved by the swap lines between the U.S. Federal Reserve and central banks in Europe.

So there is policy interest in a better understanding of maturity mismatches and leverage in the financial system (the subject of Recommendation 4 of the DGI). For banks the BIS's IBS is the main data source and the enhancements coming over the next few years should provide data that would further help track developments. There is a similar interest in maturity mismatches and leverage for shadow banks, although this work is even more conceptually challenging than for banks, with available information very limited. Work is being conducted at the IMF and in the shadow banking task force of the FSB (see ahead).

Cross-border securities investments have been an increasing source of finance...

tracked by the CPIS. The survey, coordinated by the IMF, provides data on the holdings of securities (equity and bonds), by country by counterpart issuer, that is, say U.S. resident's holdings of securities issued by Canadian residents. After an initial survey with reference to end 1997, the CPIS has been conducted annually since 2001. For a long time the CPIS data were somewhat of an undiscovered treasure for policy makers and other users (e.g., the build-up of European investments in U.S. securities during the middle years of the 2000s was clearly evident in the CPIS data but was not picked up by analysts).³⁶

One explanation of the relative obscurity was that the CPIS was an annual exercise with a year's delay in the release of the results. In other words, too many analysts considered it out of date data even when released. Providing data on cross-border security holdings across the whole economy is a large undertaking, which explains the delay.

With the support of the IMF Committee on Balance of Payment Statistics (BOPCOM), a decision has been made to make the CPIS a semi-annual survey, available within nine months of the reference period. This helps address Recommendation 11 of the DGI. These enhancements are expected to be implemented with reference to June 2013. The work on securities statistics mentioned ahead may help speed up the process, particularly if the approach of attributing security holdings and issuance by using a database that holds details of individual securities (so-called security-by-security database) becomes more prevalent. However, security-by-security database is a project with high costs as well as high benefits.

³⁵ For instance, see "The US dollar shortage in global banking," Patrick McGuire and Goetz von Peter, BIS Quarterly Review, March 2009.

³⁶ See "Data Provision to the IMF for Surveillance Purposes: Paper by the IMF," Pedro Rodriguez ([BOPCOM-08/28](#)).

Users have become more interested in the CPIS, and are asking for further breakdowns. Data on holdings by economic sector and the currency composition of the securities held, which also supports the work on the currency composition of the IIP, and would be supported by a security-by-security database, are already voluntary items. In the wake of the global crisis users are requesting a better understanding of resident's security holdings by sector of issuer—which sector's liabilities in country x do my country's residents hold. Going further, users are asking for data by sector of holder and issuer (e.g., are my banks exposed to government debt of the U.S.?). On a voluntary basis the IMF is adding templates to the CPIS that would provide data on a from-whom- to-whom basis for the 25 economies that are considered by the IMF to have systemically important financial sectors.

More generally, there is a need to expand the country coverage of the IBS and the CPIS surveys. Country coverage is generally very good, but some significant financial centers do not participate. This is the subject of Recommendation 10 of the DGI. This is an important gap to fill because the implications of financial interconnections are global in nature, and they can only truly be monitored through reliable data. The more extensive the coverage of the significant centers, the better the data from these surveys.

Also, Recommendation 14 of the DGI calls for improved coverage of the international exposures of nonbank financial institutions and the intention is to draw on the CPIS, encouraging more countries to voluntarily provide data by sector of holder.

As is evident from the above discussion, the CPIS is a vital source of information on cross-border financial interconnections,³⁷ so participation in the CPIS by provision of at least the core set of data is required in the SDDS Plus.³⁸

Foreign direct investment is another important form of cross-border financial interconnectedness...

with the recent launch of the *Coordinated Direct Investment Survey (CDIS)* complementing the IBS and the CPIS. The first CDIS was undertaken with reference to end 2009 data, by the IMF, with support of BOPCOM. While typically of a longer term nature than portfolio and banking flows, direct investment is an important channel through which cross-border financial linkages are established and such investment can be a source of productivity growth.³⁹

³⁷ CPIS data are available at <http://cpis.imf.org/>. Information on the web addresses of IMF datasets is available in Appendix VII of the *2012 Review of Data Provision to the Fund for Surveillance Purposes*, <http://www.imf.org/external/pp/longres.aspx?id=4713>.

³⁸ To meet the SDDS Plus requirement, semi-annual data for the reference period of June 2015 should be reported in January 2016.

³⁹ For instance see “Does Openness to International Financial Flows Raise Productivity Growth?” October 2008, Kose, Prasad, and Terrones, IMF Working Paper (WP/8/242) .

Because of the importance of direct investment to many economies, the CDIS has proved to be a very successful project with 84 economies reporting inward data and 59 reporting outward data in the initial survey. The first set of data was disseminated in December 2010, with the latest data for end-2011 released in December 2012.

The data are collected on an annual frequency, with counterpart country data provided for inward investment (equity and debt), with some large direct investors providing data on outward investment by counterpart country. The survey will become permanent on an annual frequency.

As with the CPIS, the CDIS is a vital source of information on cross-border financial interconnections, so participation in the CDIS by provision of inward direct investment data is required in the SDDS Plus.

Reserve asset holdings impact of international financial market conditions...

and so the IMF undertakes a quarterly survey of the *currency composition of official reserve assets (COFER)*.⁴⁰ This is a closely watched survey by market participants and policy makers, providing information on trends in official holdings of foreign currency. The global crisis has further stimulated interest in this dataset, and the IMF is working to expand the range of currencies and countries covered.

Because the information it provides on cross-border financial linkages is important for monitoring developments in the international monetary system, participation in the COFER reporting to the IMF is prescribed in the SDDS Plus. As at present, no individual country data reported the IMF will be revealed, only the aggregate totals. Individual country data will remain strictly confidential.

C. Implications of Regulatory Reform

Following the global crisis there has been a strengthening of regulatory requirements particularly for deposit-takers.⁴¹ To monitor the impact of on-going and planned regulatory reforms on domestic economies and on the international monetary system, good data are needed. In particular there is a need to identify and monitor unintended regulatory spillovers, including with regard to shadow banking, too-important-to-fail financial institutions, and over-the-counter (OTC) derivatives reform. A number of the data sets being developed and strengthened under the DGI will support this monitoring, in addition to traditional datasets such as monetary and financial statistics.

⁴⁰ <http://www.imf.org/external/np/sta/cofer/eng/index.htm>.

⁴¹ Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems—Revisited Version, Basel Committee on Banking Supervisor, June 2011.

Shadow banking is a growing phenomenon...

with a particular concern of policy makers being that regulatory reform will shift activity from the regulated deposit-takers to the more lightly regulated, non-banks as well as other shadow banking activities. The G-20 leaders asked the FSB to look into the oversight and regulation of this heterogeneous group of institutions.

Shadow banking is a broad term covering a variety of markets, instruments and institutions which replicates core features of commercial banks. The institutions covered can broadly include financial entities that are not closely regulated, such as structured finance vehicles.⁴² Other financial institutions (OFCs), or non-bank financial institutions, cover these entities and closely regulated institutions such as insurance companies and pension funds.

A number of recommendations in the DGI support a better understanding of the activities of OFCs. Detailed information from the sectoral accounts is envisaged. Indeed, the FSB report on shadow banking mentioned above calls for annual monitoring of sectoral accounts data to first assess the broad scale and trends of non-bank credit intermediation in the financial system, complemented with other relevant information such as supervisory data to monitor risk factors, including maturity transformation and leverage, on an annual basis.^{43 44}

Other data to support an assessment of the role of OFCs in the domestic and international financial systems include enhancements to monetary and financial statistics to provide more information on the funding and investment patterns of OFCs, and the detailed sectoral breakdowns to be included in the IBS and CPIS would support deeper analysis. Further the review of the FSIs is likely to lead to the inclusion of more FSIs for OFCs to help assess their financial strength, profitability, and liquidity.

Because of the importance of monitoring developments among these institutions, as noted above, an OFC survey of high level data on claims and liabilities by sector is prescribed in the SDDS Plus.

Among the markets and instruments that might be considered as part of shadow banking are “securitization” markets and secured financing contracts such as repurchase agreements and securities lending.

The available information on these markets and instruments tend to be most readily available from market sources, such as on trading volume. As noted in the FSB’s report on shadow banking, 2012, efforts are underway to obtain more data from supervisory and market sources, while the *Handbook on Securities Statistics* (see next section) encourages the collection of data on debt securities issued by securitization corporations.

⁴² See the FSB’s “Global Shadow Banking Monitoring Report,” November 2012, page 3.

⁴³ The FSB report is available at www.financialstabilityboard.org/publications/r_111027a.pdf.

⁴⁴ See for instance, “Casting Light on Shadow Banking: Data Needs for Financial Stability,” an IMF seminar on the sidelines of the 2011 IMF-World Bank Annual Meetings.

G-SIFIs are subject to regulatory reform...

and are discussed in more detail above. The I-I and I-A templates, and the structural template also being developed for these too-big-to-fail data institutions will provide information to help assess the impact of regulatory reform, such as capital surcharges, on these institutions.

OTC derivatives markets including credit default swaps...

have been subject to greater scrutiny since the global crisis as a source of systemic risk. The focus of attention has been more on the impact of regulatory reform on the OTC derivatives market. The BIS has long collected data on a semi-annual frequency on the OTC derivatives market.⁴⁵ This survey provides information on the structural developments, such as the relative size of the different types of risk based derivatives and, broadly the investor base. One of the first uses of the Legal Entity Identifier (LEI) (see ahead) will be as a tool for the reporting and aggregation of data on OTC derivatives.⁴⁶

The *credit default swap* (CDS) market is monitored through a semi-annual survey of the markets in 13 financial centers conducted by the BIS (<http://www.bis.org/statistics/derdetailed.htm>). The centers asked to report are determined by the size of the market reported in the BIS's triennial global central bank survey on the size and structure of foreign exchange (FX) and over-the-counter (OTC) derivatives markets.

The BIS set up a working group that reported in 2009 with its recommendations for expanding the available information. These recommendations were accepted by the overseeing Committee on Global Financial Systems (CGFS) and implemented in two phases in 2010 and 2011.⁴⁷ More information is being provided on the type of counterparties and the type of instruments underlying CDS. It is an important step forward and will help analysts get a better understanding of developments in the CDS market.

Expanding this survey to improve understanding of credit risk transfers is the subject of Recommendation 5 of the DGI.

D. Functioning and deepening of financial markets and access

Well functioning and well-managed financial deepening can engender greater resilience and capacity to cope with external shocks, enhance policy effectiveness and support growth. However as has become apparent in advanced economies, the process of deepening itself can create new risks, such as those arising from financial interconnectedness, unregulated financial innovation, and again, too-big-to fail institutions. While a number of the

⁴⁵ See <http://www.bis.org/statistics/derstats.htm>.

⁴⁶ See Committee on Payment and Settlement Systems (CPSS)/ International Organization of Securities Commissions (IOSCO) Report on OTC derivatives data reporting and aggregation requirement, final report, January 2012.

⁴⁷ BIS, "Credit Risk Transfer Statistics," No 35, September 2009.

recommendations in the DGI will support the analysis of the functioning of financial markets, such as the sectoral accounts and, to a lesser extent due to its limited country coverage, the enhanced CDS survey, two in particular are worth noting, the recommendations on securities data and that on transparency in the structured product market. In addition, there are other initiatives underway that also support these objectives—the legal entity identifier, and the financial access survey.

Securities markets help support diversification of funding sources...

so the work to improve the availability of data on securities markets is part of a wider effort to promote securities markets in support of financial deepening—not least the G-20 Local Bond Market Initiative.⁴⁸ By broadening the channels of intermediation, so diversifying the sources of finance, reliance on one channel, such as banks, is reduced so supporting financial stability. Good securities data, along with monetary and financial statistics can be used to examine the extent to which financial intermediation is being diversified. Recommendation 7 of the DGI has given further impetus to this work by reinforcing the importance of good security statistics.

The focus of the international community has been on providing clear international methodological guidance on compiling securities data, through the *Handbook on Securities Statistics (Handbook)* and on making data more readily available through the BIS and, in the future, through the SDDS Plus.

The *Handbook* is a joint work of BIS, ECB, and IMF. It recognizes the importance of good securities data in its core tables, which are aligned fully with the national accounts definitions. The *Handbook* has three parts, on debt issues, debt holdings, and equity securities issues and holdings, respectively (www.imf.org/external/np/sta/wgsd/index.htm).

The BIS has strengthened the collection and dissemination of securities data. The number of central banks reporting data has risen to around 60, including virtually all G-20 members, and the BIS's dissemination of securities statistics has been adapted to the recommendations in the *Handbook*, in particular revising the definition of an international issue and aligning the published breakdowns with the definitions in the *Handbook*.

Given the importance of debt security markets, for the reasons mentioned above, the SDDS Plus requires countries to provide data on the stocks of debt securities by issuer and holder on a from-whom-to-whom basis with quarterly periodicity and timeliness.⁴⁹

More generally the strengthening of securities statistics is also relevant to the implementation of a number of the recommendations in the DGI, such as the sectoral accounts and the CPIS, because securities data feed into the position and flow data throughout the national accounts. With some exceptions, all sectors of the economy are issuers and holders of securities.

⁴⁸ <http://www.g8-g20.com>.

⁴⁹ Consistent with Part 2 of the *Handbook* and BIS requirements.

Structured products can be complex...

and the global crisis raised the issue of whether investors were misled by issuers of structured products; that is whether the prospectuses for such instruments were possibly misleading, so causing a misallocation of financial resources and market disruptions when the true nature of the instruments became apparent.

Recommendation 6 called on securities regulators through International Organization of Securities Commissions (IOSCO) to further investigate disclosure requirements for complex structured products. Subsequently IOSCO has published a report providing guidance to security regulators on disclosure principles for asset-backed securities.⁵⁰

Consistency in identifying counterparts to financial transactions...

has been a high priority of the international community since the global crisis. Work is under way under the auspice of the FSB to create a universal *legal entity identifier* (LEI) that would provide a unique identifier to all legal entities participating in financial markets across the globe. Such an initiative has the potential to reduce systemic risk in financial markets by making it easier for market participants to recognize their counterparties and manage their exposures, so hopefully improving the functioning of financial markets and reducing counterparty risk.

The FSB Legal Entity Identifier Group has made significant progress, and a global LEI Regulatory Oversight Committee Charter was endorsed by G-20 Finance Ministers and Central Bank Governors in November 2012.

Access to basic financial services is an indication of financial inclusion...

and to monitor this the IMF annually undertakes a *Financial Access Survey (FAS)* to provide geographic and demographic data on access to basic consumer financial services worldwide (<http://fas.imf.org>). This is a global supply side database on financial inclusion, encompassing internationally comparable basic indicators of financial access and usage, and a source of data for the G-20 Basic Set of Financial Inclusion Indicators.⁵¹

⁵⁰ See “Transparency of Structured Finance Products, Report of the Technical Committee of IOSCO” July 2010.

⁵¹ The FAS covers all five categories of the G-20 Basic Set of Financial Inclusion Indicators endorsed by the G-20 Leaders at the Los Cabos Summit in June 2012.

In addition to providing a better understanding of the state of domestic financial inclusion as well as how a country ranks amongst its regional and income group peers, the FAS also enables policy makers, researchers, and financial sector practitioners to better assess the relationships between financial inclusion and poverty reduction, growth, macro prudential risks, and financial sector/macroeconomic stability.

III. IMPROVING COMMUNICATION OF OFFICIAL STATISTICS

In addition to compiling data, attention to communication is important. Particularly when assessing financial stability, critical data may be available but not widely known to policy makers. By prescription in the SDDS Plus the relevance for financial stability of the nine data categories is highlighted. Indeed, the importance of disseminating key datasets to the public to improve the functioning of markets is a central tenet of the IMF's data standards initiative.

The role of publishing data to the public to help the functioning of markets has a long history. In his book, "Fault Lines," Professor Rajan⁵² concludes on the benefits of more public disclosure by too systemic to fail institutions. He considers that the best way to keep institutions from becoming too systemically important is through collecting and monitoring of information by regulators about inter-institution exposures as well as risk concentrations in the system: "information on exposures should be released periodically and publicly, after the passage of an appropriate amount of time."

To support the communication of data, the agencies represented in the IAG, have launched the PGI website (<http://www.principalglobalindicators.org/default.aspx>) to promote comparable data sets for the real, financial, government and external sectors of the G-20 economies, and economies with systemically important financial sectors. This website has proved most successful (Recommendation 20 of the DGI).

IV. CONCLUSION

The increased focus on the stability of the financial system has thrown attention on the data needs for this work. This has caused compilers and users of economic and financial data to reassess the data available. This reassessment has led to an effort to close data gaps and to the development of a new tier of the IMF's data dissemination standard. This paper has demonstrated the relevance for financial stability analysis of the recommendations in the DGI and the data categories in the SDDS Plus.

Indeed the purpose of the SDDS Plus is to build on the SDDS to guide member economies, especially those with systemic financial sectors, on the provision of economic and financial data to the public in support of domestic and international financial stability. In short, along with the SDDS, the SDDS Plus data categories can be viewed as a core set of data necessary for financial stability analysis.

⁵² Rajan R. G. (2010), *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press.

Increased prominence is being given to data for monitoring interconnections both domestic and cross-border and to financial institutions including G-SIFIs, and shadow banking. Further, questions have been raised about the relationship between residence-based and consolidated data against a background of a convergence of interests between the traditional supervisory functions and macro prudential analysis, and there is growing interest in measures of liquidity.

While challenges remain, the goal remains clear: to promote understanding of economic and financial developments, to support evidence-based policy decisions and better market functioning through greater transparency, contribute to the stability of the international monetary system, and hopefully avoid similar crisis to that which the world has just endured.

ANNEX I. LIST OF RECOMMENDATIONS

Recommendation	
1.	Staffs of FSB and IMF staff to report back to G-20 Finance Ministers and Central Bank Governors by June 2010 on progress, with a concrete plan of action, including a timetable, to address each of the outstanding recommendations. Thereafter, staffs of FSB and IMF to provide updates on progress once a year. Financial stability experts, statisticians, and supervisors should work together to ensure that that the program is successfully implemented.
Monitoring Risk in the Financial Sector	
2.	The IMF to work on increasing the number of countries disseminating Financial Soundness Indicators (FSIs), including expanding country coverage to encompass all G-20 members, and on other improvements to the FSI website, including preferably quarterly reporting. FSI list to be reviewed.
3.	In consultation with national authorities, and drawing on the <i>Financial Soundness Indicators Compilation Guide</i> , the IMF to investigate, develop, and encourage implementation of standard measures that can provide information on tail risks, concentrations, variations in distributions, and the volatility of indicators over time.
4.	Further investigation of the measures of system-wide macroprudential risk to be undertaken by the international community. As a first step, the BIS and the IMF should complete their work on developing measures of aggregate leverage and maturity mismatches in the financial system, drawing on inputs from the Committee on the Global Financial System (CGFS) and the Basel Committee on Banking Supervision.
5.	The CGFS and the BIS to undertake further work in close cooperation with central banks and regulators on the coverage of statistics on the credit default swap markets for the purpose of improving understanding of risk transfers within this market.
6.	Securities market regulators working through IOSCO to further investigate the disclosure requirements for complex structured products, including public disclosure requirements for financial reporting purposes, and make recommendations for additional improvements if necessary, taking account of work in other relevant bodies.
7.	Central banks and, where relevant, statistical offices, particularly those of the G-20 economies, to participate in the BIS data collection on securities and contribute to the further development of the <i>Handbook on Securities Statistics (Handbook)</i> . The Working Group on Securities Databases to develop and implement a communications strategy for the <i>Handbook</i> .

International Network Connections	
8.	The FSB to investigate the possibility of improved collection and sharing of information on linkages between individual financial institutions, including through supervisory college arrangements and the information exchange being considered for crisis management planning. This work must take due account of the important confidentiality and legal issues that are raised, and existing information sharing arrangements among supervisors.
9.	The FSB, in close consultation with the IMF, to convene relevant central banks, national supervisors, and other international financial institutions, to develop by end 2010 a common draft template for systemically important global financial institutions for the purpose of better understanding the exposures of these institutions to different financial sectors and national markets. This work should be undertaken in concert with related work on the systemic importance of financial institutions. Widespread consultation would be needed, and due account taken of confidentiality rules, before any reporting framework can be implemented.
10.	All G-20 economies are encouraged to participate in the IMF's Coordinated Portfolio Investment Survey (CPIS) and in the BIS's International Banking Statistics (IBS). The IMF and the BIS are encouraged to continue their work to improve the coverage of significant financial centers in the CPIS and IBS, respectively.
11.	The BIS and the CGFS to consider, amongst other improvements, the separate identification of nonbank financial institutions in the consolidated banking data, as well as information required to track funding patterns in the international financial system. The IMF, in consultation with the IMF's Committee on Balance of Payments Statistics, to strive to enhance the frequency and timeliness of the CPIS data, and consider other possible enhancements, such as the institutional sector of the foreign debtor.
12.	The IMF to continue to work with countries to increase the number of International Investment Position (IIP) reporting countries, as well as the quarterly reporting of IIP data. The <i>Balance of Payments and International Investment Position Manual</i> , sixth edition (BPM6) enhancements to the IIP should be adopted by G-20 economies as soon as feasible.
13.	The Interagency Group on Economic and Financial Statistics (IAG) to investigate the issue of monitoring and measuring cross-border, including foreign exchange derivative, exposures of nonfinancial, and financial, corporations with the intention of promoting reporting guidance and the dissemination of data.
14.	The IAG, consulting with the FSB, to revisit the recommendation of the G-20 to examine the feasibility of developing a standardized template covering the international exposures of large nonbank financial institutions, drawing on the experience with the BIS's IBS data, other existing and prospective data sources, and consulting with relevant stakeholders.

Sectoral and Other Financial and Economic Datasets	
15.	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. The experience of the ECB and Eurostat within Europe and the OECD should be drawn upon. In the medium term, including more sectoral balance sheet data in the data categories of the Special Data Dissemination Standard could be considered.
16.	As the recommended improvements to data sources and categories are implemented, statistical experts to seek to compile distributional information (such as ranges and quartile information) alongside aggregate figures, wherever this is relevant. The IAG is encouraged to promote production and dissemination of these data in a frequent and timely manner. The OECD is encouraged to continue in its efforts to link national accounts data with distributional information.
17.	The IMF to promote timely and cross-country standardized and comparable government finance data based on the accepted international standard, the <i>Government Finance Statistics Manual 2001</i> .
18.	The World Bank, in coordination with the IMF, and consulting with the Inter-Agency Task Force on Finance Statistics, to launch the public sector debt database in 2010.
19.	The Inter-Secretariat Working Group on Price Statistics to complete the planned handbook on real estate price indices. The BIS and member central banks to investigate dissemination on the BIS website of publicly available data on real estate prices from the BIS's Data Bank. The IAG to consider including real estate prices (residential and commercial) in the Principal Global Indicators (PGI) website.
Communication of Official Statistics	
20.	The G-20 economies to support enhancement of the Principal Global Indicators website, and close the gaps in the availability of their national data. The IAG should consider making longer runs of historical data available.

REFERENCES

Basel Committee on Banking Supervision, 2011, “Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems” (Basel). Available via the Internet: <http://www.bis.org/publ/bcbs189.htm>.

BIS, “Credit Risk Transfer Statistics”, No 35, September 2009. Available via the Internet: <http://www.bis.org/publ/cgfs35.pdf>.

BIS, ECB and IMF, “Handbook on Securities Statistics,” Parts 1 (2009), 2 (2010), and 3 (2012). Available via the Internet: <http://www.imf.org/external/np/sta/wgsd/index.htm>.

Borio, Claudio and Drehmann, Mathias, “Assessing the Risk of Banking Crises—Revisited,” March, 2009. Available via the Internet: http://www.bis.org/publ/qtrpdf/r_qt0212e.pdf.

Cecchetti, Stephen G, Fender, Ingo, and McGuire, Patrick, “Towards a Global Risk Map,” May, 2010. Available via the Internet: <http://www.bis.org/publ/work309.htm>.

Cerutti, Claessens, and McGuire “Systemic Risks in Global Banking: What available data can tell us and what more data are needed?” September 2011, WP/11/222. Available via the Internet: <http://www.imf.org/external/pubs/ft/wp/2011/wp11222.pdf>

Committee on Payment and Settlement Systems (CPSS)/ International Organization of Securities Commissions, “OTC derivatives data reporting and aggregation requirement, final report,” January 2012, Available via the Internet: <http://www.bis.org/publ/cps100.htm>

Dippelsman, Dziobek, Gutierrez Mangas, “What Lies Beneath: The Statistical Definition of Public Sector Debt,” IMF Discussion Note SDN/12/09, July 2012, (Washington: International Monetary Fund). Available via the Internet: <http://www.imf.org/external/pubs/ft/sdn/2012/sdn1209.pdf>.

Frecaut, Olivier, 2004, “Indonesia’s Banking Crisis: A New Perspective on \$50 Billion of Losses” *Economic Studies*, Vol. 40, Issue 1.

FSB, 2011, “Understanding Financial Linkages: A Common Data Template for Global Systemically Important Bank” (Basel). Available via the Internet: http://www.financialstabilityboard.org/publications/r_111006.pdf.

FSB, 2011, “Shadow Banking: Strengthening Oversight and Regulation “(Basel). Available via the Internet: http://www.financialstabilityboard.org/publications/r_111027a.pdf.

FSB, 2012, “Global Shadow Banking Monitoring Report,” (Basel) Available via the Internet:
http://www.financialstabilityboard.org/publications/r_121118c.pdf.

FSB and IMF, 2009, “The Financial Crisis and Information Gaps “(Washington). Available via the Internet: <http://www.imf.org/external/np/g20/pdf/102909.pdf>.

FSB and IMF, 2010, “The Financial Crisis and Information Gaps Progress Report, action Plans and Timetables ” (Washington). Available via the Internet:
<http://www.imf.org/external/np/g20/pdf/053110.pdf>.

FSB and IMF, 2011, “Implementing the G-20 Data Gaps Recommendations: State of Play and Next Steps ” (Washington). Available via the Internet:
<http://www.imf.org/external/np/seminars/eng/2011/datagaps/index.htm>.

Heath, Robert, “Data Requirements from Users on the International Investment Position,” October 15, 2008. Available via the Internet:
<http://isi.cbs.nl/iaos/conferences/2008Shanghai.htm>.

Hashimoto, Yuko and Konstantin Wacker, “The Role of Risk and Information for International Capital Flows: New Evidence from the SDDS”, October 05, 2012, IMF Working Paper (WP/12/242). Available via the Internet:
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=40041.0>.

IMF, 2001, *Government Finance Statistics Manual*. Available via the Internet:
<http://www.imf.org/external/pubs/ft/gfs/manual/index.htm>.

IMF, 2006. *Financial Soundness Indicators Guide*. Available via the Internet:
<http://www.imf.org/external/pubs/ft/fsi/guide/2006/index.htm>.

IMF, 2009, *Balance of Payments and International Investment Position Manual*. (6th edition). Available via the Internet:
<http://www.imf.org/external/pubs/ft/bop/2007/bopman6.htm>.

IMF, “Interim Report for the Eighth Review of the Fund’s Data Standards Initiatives,” February 8, 2011. Available via the Internet:
<http://www.imf.org/external/pp/longres.aspx?id=4559>.

IMF, 2011, “IMF Connects Dots in Spillover Analysis of Major Economies,” *IMF Survey Magazine*, September 2. Available via the Internet:
<http://www.imf.org/external/pubs/ft/survey/so/2011/CAR090211B.htm>.

IMF, 2011, “Casting Light on Shadow Banking: Data Needs for Financial Stability,” *IMF Survey Magazine*, September 29. Available via the Internet:
<http://www.imf.org/external/pubs/ft/survey/so/2011/NEW092911B.htm>.

IMF 2012 “Enhancing Surveillance: Interconnectedness and Clusters,” Available via the Internet at .
<http://www.imf.org/external/np/pp/eng/2012/031512.pdf> - 1322k - PDF

IMF, 2012, “The IMF’s Financial Surveillance Strategy,” Available via the Internet:
<http://www.imf.org/external/np/sec/pn/2012/pn12111.htm>.

IMF, 2012, “2012 Review of Data Provision to the Fund for Surveillance Purposes,” Available via the Internet:
<http://www.imf.org/external/pp/longres.aspx?id=4713>.

IOSOC, “Transparency of Structured Finance Products, Report of the Technical Committee of IOSCO.” July 2010. Available via the Internet:
<http://www.iosco.org/library/index.cfm?section=pubdocs&year=2010>

Johnston, R. B.; Psalida, L. Effie; De Imus, Phil; Gobat, Jeanne; Goswami, Mangal; Mulder, Christian B.; Vázquez, Francisco F., “Addressing Information Gaps,” March 26, 2009, Staff Position Note No. 2009/06. Available via the Internet:
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=22824.0>.

Kose, Prasad, and Terrones, “Does Openness to International Financial Flows Raise Productivity Growth?” October 2008, IMF Working Paper (WP/08/242). Available via the Internet:
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=22387.0>

Kumar and Woo “Public Debt and Growth” July 2012, IMF Working Paper (WP/10/174). Available via the Internet:
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=24080.0>

McGuire, Patrick and Goetz, Peter von, 2009 “The US Dollar Shortage in Global Banking,” BIS Quarterly Review (March). Available via the Internet:
http://www.bis.org/publ/qtrpdf/r_qt0903f.pdf

OECD 2011, Better Life Initiative: Your Better Life Index (Paris). Available via the Internet:
<http://www.oecd.org/betterlifeindex>.

Rajan R. G., 2010, “*Fault Lines: How Hidden Fractures Still Threaten the World Economy*,” (Princeton University Press).

Rodriguez, Pedro, “Data Provision to the IMF for Surveillance Purposes: Paper by the IMF,” November 4, 2008, No. 28. Available via the Internet:
<http://www.imf.org/external/pubs/ft/bop/2008/21.htm>.

Taleb, Canetti, Kinda, Loukoianova, and Schmieder, “A new Heuristic Measure of Fragility and Tail Risks: Application to Stress Testing,” August 2012, IMF Working Paper, (WP/12/216). Available via the Internet:
<http://www.imf.org/external/pubs/cat/longres.aspx?sk=26222.0>