

INTERNATIONAL MONETARY FUND

Broadening Financial Indicators in the Special Data Dissemination Standard

Prepared by the Statistics Department

(In consultation with other departments)

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ACRONYMS

BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
<i>BPM5</i>	<i>Balance of Payments Manual, Fifth Edition, 1993</i>
<i>BPM6</i>	<i>Balance of Payments and International Investment Position Manual, Sixth Edition, 2008</i>
CCE	Coordinated Compilation Exercise
DQAF	Data Quality Assessment Framework
DSBB	Dissemination Standards Bulletin Board
ECB	European Central Bank
EWE	Early Warning Exercise
FAD	Fiscal Affairs Department
FIs	Financial Indicators
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSIs	Financial Soundness Indicators
FSI Guide	Financial Soundness Indicators: Compilation Guide
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
GFSR	Global Financial Stability Report
IIP	International Investment Position
IMF	International Monetary Fund
IMFC	International Monetary and Financial Committee
LEG	Legal Department
MCM	Monetary and Capital Markets Department
NPL	Nonperforming Loans
NSDP	National Summary Data Page
OECD	Organization for Economic Cooperation and Development
QEDS	Quarterly External Debt Statistics
RES	Research Department
Reserves Template	Data Template on International Reserves and Foreign Currency Liquidity
ROSC	Report on the Observance of Standards and Codes
RWA	Risk-Weighted Assets
SDDS	Special Data Dissemination Standard
SDR	Special Drawing Rights
<i>2008 SNA</i>	<i>System of National Accounts 2008</i>
SPR	Strategy, Policy, and Review Department
STA	Statistics Department
UN	United Nations
UN/ECE	United Nations Economic Commission for Europe

EXECUTIVE SUMMARY

In December 2008, the IMF Executive Board discussed the Seventh Review of Data Standards Initiatives, and Directors requested staff to return to the Board within about a year with a proposal for the inclusion of selected financial indicators in the Special Data Dissemination Standard (SDDS). This paper responds to the 2008 request taking into account recent developments.

The recent financial crisis has heightened the need for policymakers, financial regulators and capital market participants to put in place conditions that would help prevent the occurrence of similar crises in the future. One of the areas identified by the international community as key in crises prevention is the availability of timely and more detailed financial data that could provide early warning signals of impending risks and vulnerabilities.

G-20 countries recommended that the Fund and Financial Stability Board (FSB) explore data gaps and provide appropriate proposals for strengthening data collection. This mandate was endorsed by the IMF's International Monetary and Financial Committee at its Spring Meetings in April 2009.

As a result, staff of the IMF and the FSB organized a Users' Conference on the Financial Crisis and Information Gaps in July 2009. Conference participants took a comprehensive look at economic and financial sector data needs, and the outcomes of the conference informed the report to the G-20 Finance Ministers and Central Bank Governors (G-20 report) in November 2009.¹ Recognizing the potential cost related to addressing these gaps, the G-20 report highlighted the importance of building on existing reporting frameworks and coordinating efforts both nationally and internationally. In this context, the SDDS provides a crucial benchmark for key macroeconomic and financial data dissemination.

The global financial crisis has revealed various information gaps, including: (1) insufficient data on credit, liquidity, leverage, and solvency risks facing financial systems, which highlights the need for macro-prudential indicators, such as financial soundness indicators, which may help provide effective early warnings; and (2) insufficient data on cross-border positions, which points to the need for strengthened data on external debt as well as high frequency data on the international investment position.

¹ See the Report to the G-20 Finance Ministers and Central Bank Governors on *The Financial Crisis and Information Gaps* (2009) at <http://www.imf.org/external/np/g20/pdf/102909.pdf>.

This paper provides a proposal to address some of the identified gaps through the SDDS as an effective tool to encourage the wider Fund membership to disseminate financial data.

The proposal comprises the following points: (1) include seven financial soundness indicators into the SDDS on an encouraged basis; (2) incorporate international investment position data with quarterly periodicity and timeliness as an SDDS prescription; (3) add a simplified table on external debt by remaining maturity on an encouraged basis; and (4) accelerate the Eighth Review of the Data Standards Initiatives to 18–24 months from the date of the Board discussion.

The Eighth Review of the Fund's Data Standards Initiatives would suggest new areas for data dissemination consistent with identified data gaps such as sectoral balance sheets, work to enhance data from the IMF's Coordinated Portfolio Investment Survey, and ongoing work on FSI re-evaluation as well as other possible revisions or upgrades to the SDDS framework.

I. INTRODUCTION

1. **In December 2008, the IMF Executive Board discussed the Seventh Review of Data Standards Initiatives, and Directors requested staff to return to the Board within about a year with a proposal for the inclusion of selected financial indicators (FIs) in the Special Data Dissemination Standard (SDDS).** This paper responds to the 2008 Executive Board request taking into consideration recent economic and financial developments.

2. **In the broader context of the data needs resulting from the global crisis, staff have consulted widely to gather views on data gaps that have come to light as a result of the financial crisis.** There appears to be a relatively high degree of consensus on where the gaps lie. In March 2009, the G-20 Working Group #2 on Reinforcing International Cooperation and Promoting Integrity in Financial Markets recommended that the Fund and FSB explore data gaps and provide appropriate proposals for strengthening data collection. This mandate was endorsed by the IMF's International Monetary and Financial Committee (IMFC) at its Spring Meetings in April 2009.

3. **In July 2009, as part of this work for the G-20/IMFC, staff of the IMF, and the FSB organized a Users' Conference on the Financial Crisis and Information Gaps at Fund headquarters.** Conference participants took a comprehensive look at economic and financial sector data needs, and the outcomes of the conference informed the report to the G-20 Finance Ministers and Central Bank Governors (G-20 report) in November 2009.² Recognizing that filling gaps would be costly, the G-20 report highlighted the importance of building on existing reporting frameworks and coordinating efforts both nationally and internationally. In this context, the SDDS provides a crucial benchmark for key macroeconomic and financial data dissemination.

4. **While some of the ideas in the G-20 report require further consultation, which in turn may have implications for the Eighth Review of the SDDS, others are directly relevant in the context of the Executive Board's request from December 2008.** These are:
 - inclusion of financial soundness indicators (FSIs) on an encouraged basis to support the monitoring of the financial sector and detecting systemic risks;
 - strengthening data on the international investment position (IIP) to better understand cross-border financial linkages; and

² See the Report to the G-20 Finance Ministers and Central Bank Governors on *The Financial Crisis and Information Gaps* (2009) <http://www.imf.org/external/np/g20/pdf/102909.pdf>.

- encouraging data on the remaining maturity of external debt to support the monitoring of the vulnerability of domestic economies to external shocks (although this is beyond the recommendations covered in the G-20 report, it is consistent with its analysis).³

5. **While the G-20/IMFC work has focused on the G-20 economies, the data gaps identified apply to a broader range of Fund membership.** This paper emphasizes that incorporating these FIs in the SDDS is an effective tool to encourage the wider Fund membership to disseminate financial data.

6. **The rest of this paper is structured as follows: Section II emphasizes the dynamic nature of the SDDS as a relevant tool for promoting transparency of financial information and recaps the origins and evolution of the SDDS, observing that the recent financial crisis provides an opportunity to review the recommendations of the SDDS with regard to FIs.** This need was noted by the Board during the Seventh Review of the Fund’s Data Standards Initiative (the Seventh Review). This section sets out the implications for the SDDS of the global financial crisis. Section III identifies a set of proposals on financial indicators to further enhance the SDDS, covering FSIs, external debt by remaining maturity, and quarterly IIP data. Section IV summarizes progress on the implementation of the outcome from the Seventh Review. Section V considers a work program and resource implications. Section VI proposes that the Board consider accelerating the Eighth Review of the Fund’s Data Standards Initiatives (Eighth Review) to within 18–24 months and suggests new areas for data dissemination consistent with data gaps such as sectoral balance sheets and a re-evaluation of FSIs. Section VII summarizes the outcome of the consultation process with SDDS subscribers, capital market participants and others. Section VIII concludes with issues for Board discussion.

II. WHY INCORPORATE FINANCIAL INDICATORS IN THE SDDS

A. The SDDS as promoter of transparency

7. **In the wake of the financial crises in the 1990s (starting with the 1994 Mexican crisis), there was broad consensus that the lack of transparency in providing information played a major role in triggering and prolonging crises.** As a result, the international community agreed, among other things, on the need for specific steps to increase the availability of comprehensive, timely and high frequency data. The new emphasis on transparency was based on the expectations that release of more comprehensive,

³ The expression “remaining maturity” is used here (consistently with the *Balance of Payments and International Investment Position Manual, sixth edition, BPM6*), and is equivalent to “residual maturity.”

frequent, and timely data as well as more information on economic and financial policies would enable economic agents to take timely and informed steps that would help support sound economic policies and reduce the probability of crises.

8. **Efforts to promote transparency gave rise to two major IMF data dissemination initiatives that were aimed at fostering a disciplined and structured approach to the official dissemination of macroeconomic data: the SDDS and the General Data Dissemination System (GDDS).** The IMF encouraged member countries with access, or preparing for access, to capital markets to subscribe to the more demanding SDDS. Countries with less advanced statistical systems were encouraged to participate in the GDDS with a view to preparing for eventual graduation to the SDDS, as relevant. The SDDS was designed to guide countries to provide economic and financial data to the public. Thus, by enhancing the availability of comprehensive and timely statistics, this standard aimed at facilitating countries' pursuit of sound macroeconomic policies and improving the functioning of financial markets.

9. **By itself, the SDDS cannot prevent financial crises; however, timely and high-frequency data can help mitigate financial crises by enhancing access to the information critical to policymakers and market participants.** The SDDS may help dampen the size and transmission of shocks by allowing investors to differentiate economic and financial performances across economies. In fact, the SDDS continued to provide policymakers with a reliable source of macroeconomic data even in the depths of the recent financial crisis.

10. **The SDDS was designed to evolve over time to address new data needs. Enhancements to the SDDS—such as the additions of the Data Template on International Reserves and Foreign Currency Liquidity, external debt statistics, and the IIP as prescribed data categories—are important in ensuring that the objective of disseminating relatively comprehensive information on a country's economic and financial conditions is maintained.** The recent developments in the financial markets highlighted the importance of reviewing FIs in the context of the SDDS and encouraging dissemination of enhanced financial data.

B. The current financial crisis and implications for the SDDS

11. **The recent financial crisis has heightened the need for policymakers, financial regulators and capital market participants to put in place conditions that would help prevent the occurrence of similar crises in the future.** One of the areas identified by the international community as key in crisis prevention is the availability of timely and more detailed financial data that could provide early warning signals of impending risks and vulnerabilities. These data would enable markets to better assess financial sectors and external positions across countries. The need for more financial data underscores the IMF

Executive Board's direction at the Seventh Review of the Fund's Data Standards Initiatives to introduce selected financial indicators in the SDDS.

12. **The Fund, in close collaboration with the FSB and through reporting to the G-20, has embarked on new initiatives to identify and close key data gaps made apparent by the global financial crisis.** The focus of these initiatives has been on the financial sector, which proved to be particularly vulnerable in the recent crisis.

13. **Specifically, the global financial crisis has revealed various information gaps, including:** (1) insufficient data on credit, liquidity, leverage, and solvency risks facing financial systems, which would indicate the need for relevant macro-prudential indicators, such as FSIs, which may help in providing effective early warnings; and (2) insufficient data on cross-border positions, which points to the need for strengthened data on external debt as well as high frequency data on the IIP.

14. **To gain a broader perspective of information gaps that hamper the proper assessment of financial institutions and financial system stability, the staff of the IMF and the FSB organized the Users' Conference (noted above) to discuss specific data gaps and elicit the users' views on their data needs for the conduct of financial stability analysis.**⁴ In the same vein, the Fund and the FSB are working on an early warning exercise (EWE)⁵, which would be a complementary tool to an enhanced SDDS.

15. The following section develops a proposal to address some of the identified gaps through the SDDS.

III. SPECIFIC GAPS IN THE SDDS⁶

16. **Specific gaps in the SDDS to be considered in this section cover financial soundness indicators and external sector statistics.** The rationale for proposing to expand the SDDS in these directions is explored in detail below.

⁴ Users' Conference on the Financial Crisis and Information Gaps (Washington), July 2009
<http://www.imf.org/external/np/seminars/eng/2009/usersconf/index.htm>

⁵ The envisaged EWE is a recurrent process for integrating macrofinancial and regulatory perspectives, and identifying systemic risks and vulnerabilities. See for example, Factsheet IMF-FSB Early Warning Exercise
<http://www.imf.org/external/np/exr/facts/ewe.htm>

⁶ The proposals set out in this section would require amendments to the SDDS legal text. If approved by the Board, STA would consult with LEG to incorporate those changes.

A. Financial Soundness Indicators

17. **FSIs were developed as a response by the international community to the financial crises in the 1990s (see Box 1).** They were conceived as a new area of statistics—macroprudential statistics—that would fill the gap between monetary macroeconomic statistics and microprudential data in assessing the soundness of the financial sector as a whole. Derived from sector-level supervisory and prudential data, they complement data derived from monetary surveys as well as those from other economic sources, which were deemed insufficient. The FSI framework is broadly derived from the CAMELS⁷ rating system widely used in supervisory agencies. The full list of FSIs endorsed by the Executive Board and brief definitions are provided in Annex 1 and 2.⁸

18. **While some FSIs performed well at foreshadowing the present crisis, other FSIs are generally recognized as current or lagging indicators.** Some, for example, indicate potential ability to withstand a crisis, or actual resilience during a crisis, and therefore could be considered concurrent, rather than leading indicators.⁹ Staff has invested considerable effort in getting international consensus on FSIs and their methodology with a view to making these indicators analytically useful.

⁷ CAMELS, which stands for capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk, is commonly used in supervisory frameworks for grouping indicators of bank soundness.

⁸ The Executive Board discussion was based on a paper entitled “Financial Soundness Indicators: Experience with the Coordinated Compilation Exercise and Next Steps” and on supporting information provided in a background paper entitled “Financial Soundness Indicators: Experience with the Coordinated Compilation Exercise and Next Steps: Background Paper.”(dated October 18, 2007) [Financial Soundness Indicators: Experience with the Coordinated Compilation Exercise and Next Steps; October 18, 2007](#)

⁹ See for instance, R. Barry Johnston, Effie Psalida, Phil de Imus, Jeanne Gobat, Mangal Goswami, Christian Mulder, and Francisco Vazquez “Addressing Information Gaps”, IMF Staff Position Note, March 26, 2009.

Box 1: Development of Financial Soundness Indicators

An initial list of FSIs was compiled in 2000, when staff conducted an extensive survey of 122 countries to ascertain countries' preferences regarding FSIs, as well as their availability. As a result, a list of 40 FSIs¹⁰ was approved by the IMF Board—25 for the deposit-taking sector (of which 12 are core FSIs), and 15 for client sectors of deposit takers and for markets crucial to deposit takers' soundness. Updates to the list were envisaged over time, as capacity and experience with the indicators increased.

In March 2004, the IMF Statistics Department (STA) launched a voluntary Coordinated Compilation Exercise (CCE) on FSIs. A total of 62 countries were invited to participate in the CCE. They were requested to compile and report 12 core FSIs (covering deposit-taking institutions) using end-2005 as the reference date, along with related metadata, and provide them to the Fund for dissemination. They were also asked to provide some or all of the 28 encouraged FSIs (covering in addition other financial institutions, non-financial corporations, market liquidity in securities markets, real estate, and households) and the corresponding metadata. To facilitate the implementation of the CCE work program, the Fund provided technical assistance and training, developed standard data and metadata report forms, and created web pages for the dissemination of CCE information. As part of this work program, the IMF produced the *Financial Soundness Indicators: Compilation Guide (FSI Guide)*.

A total of 58 of the 62 CCE invited economies participated, of which 55 were SDDS subscribers. The CCE revealed diverse methodologies used to compile FSIs because of differences in: (1) supervisory and accounting practices; (2) data availability; (3) costs involved in collecting the additional data to fully implement the recommendations of the *FSI Guide*; and (4) views on the appropriate methodology for FSI compilation. The diverse methodologies used to compile FSIs during the CCE highlighted the need for the associated metadata.

On November 7, 2007, the Executive Board reviewed the experience with the work program on FSIs and discussed proposals for taking forward this work.¹¹ Directors noted the value in the regular collection and dissemination of FSIs by the IMF, with the creation of a centralized public FSI database that would be available to member countries, international institutions, and markets. This would enhance data availability, encourage greater cross-country comparability of indicators in financial analysis, contribute to greater transparency, and reduce the reporting burden of countries to the IMF.

In July 2009, STA launched a website for the public dissemination of FSIs which now covers 49 economies, all of whom are SDDS subscribers.¹² Reporters voluntarily provide to STA for dissemination data on the 12 core FSIs, and as many of the 28 encouraged FSIs as they deem appropriate. While many countries report FSIs on a quarterly basis, several others opt for different frequencies (annual, semiannual, or monthly). No timeliness requirements are currently embedded in the FSI database, so the indicators appear with different lags across reporters. Complementing FSIs by analysis of higher frequency market-based data may help provide more forward-looking information on expectations and volatility.

¹⁰ See Annex 1.

¹¹ See footnote 8.

¹² The FSI website is at <http://fsi.imf.org/>. The remaining 18 SDDS subscribers not currently reporting FSIs to STA for dissemination are: Argentina, Belarus, Costa Rica, Croatia, Ecuador, Egypt, Finland, Iceland, Ireland, Israel, Japan, Jordan, Kyrgyz Republic, Moldova, Morocco, Peru, Thailand, and Tunisia.

19. The selection criteria for including FSIs in the SDDS are based on:

- Analytical usefulness of the chosen FSIs in covering—as a *set*—as many of the basic aspects of financial soundness of the deposit-taking sector as possible (capital adequacy, asset quality, profitability, credit risk, liquidity risk, and market risk), while simultaneously taking into account both their perceived usefulness in the recent crisis and their effectiveness in monitoring future crises involving different risks and vulnerabilities;
- Assessments of the usefulness of existing FSIs as indicated in an IMF Staff Position Note¹³, by data users during the 2009 Users’ Conference and in consultations with subscribers and capital market participants;
- Feasibility for countries to provide data on the proposed indicators without involving an excessive reporting burden, as well as synergies with the demands of the *Global Financial Stability Report (GFSR)*, hence the need for parsimony and focus on the most analytically useful indicators; and
- Comparative advantage of the Fund in collecting data not readily available from commercial sources.

20. **The Users’ Conference supported the need for the compilation of FSIs, their dissemination as part of the data needed for financial stability analysis, and need to maintain principal focus on deposit takers.** The conference concluded that different FSIs performed differently during the global financial crisis in terms of providing early warning signals across countries. Expectations for short-term progress were discussed, including work that is already underway to expand coverage of the FSI database to all G-20 members, and efforts to incorporate some FSIs in the SDDS.¹⁴

21. **Consistent with the Executive Board’s call for a staff proposal to incorporate FIs in the SDDS, the staff reviewed the existing 40 FSIs included in the Fund’s FSI database.** On the basis of the criteria presented above, seven FSIs are proposed for inclusion in the SDDS on an encouraged basis (see Table 1). They were selected based on their analytical usefulness, operational relevance, and data availability. These FSIs are compiled for the deposit-taking sector as a whole in each economy, thereby covering the most

¹³ See footnote 9.

¹⁴ Currently, four G-20 countries (Argentina, China, Japan, and Saudi Arabia) do not report FSI data to the Fund.

important component of the financial system.¹⁵ The set of indicators is largely consistent with those indicators already reported in the *GFSR* and provides some coverage of all key aspects of financial system soundness—capital adequacy, earning and profitability, asset quality, liquidity, and sensitivity to market risk (Table 1).¹⁶ In this regard, the selected FSIs are intended to capture different risks and vulnerabilities of the financial sector and are relevant for monitoring future financial developments in each country. In addition, the selection of these FSIs is informed by the assessments of the usefulness of FSIs as indicated in a staff note.¹⁷

Table 1: Proposed FSIs for Inclusion in SDDS

Descriptions	Number of Reporting Countries			Periodicity ^{1/}				Indicator Type ^{2/}
	G-20	Non G-20	Total	M	Q	SA	A	
FSIs for Deposit Takers								
1 Regulatory Tier 1 capital to risk-weighted assets	15	34	49	2	23	8	21	CA
2 Regulatory Tier 1 capital to assets ^{3/}	12	28	40	2	20	8	15	CA
3 Nonperforming loans net of provisions to capital	15	31	46	1	22	8	20	CA
4 Nonperforming loans to total gross loans	15	32	47	2	22	8	20	CR
5 Return on assets	15	34	49	2	22	7	22	P
6 Liquid assets to short-term liabilities	14	31	45	2	23	7	18	LR
7 Net open position in foreign exchange to capital	10	29	39	2	18	7	17	MR

1/ M - Monthly, Q - Quarterly, SA - Semiannual, A - Annual

2/ CA - Capital adequacy, CR - Credit risk, P - Profitability, LR - Liquidity risk, MR - Market risk

3/ This indicator is closely related to indicator 13 (capital to assets ratio) of the agreed list of 40 FSIs. Some countries submit the data using regulatory tier 1 capital, while others use a broader definition, e.g., total capital and reserves or total regulatory capital.

22. **Three out of the seven FSIs proposed for inclusion in the SDDS are indicators of capital adequacy.** The adequacy and availability of capital are very important for financial sector stability assessments, as they determine the robustness of the deposit-taking sector to withstand shocks to their balance sheets.

- ***Regulatory Tier 1 capital to risk-weighted assets.*** This indicator measures the capital adequacy of deposit takers based on the core capital concept of the Basel Committee on Banking Supervision (BCBS). It is useful for monitoring

¹⁵ The need for FSIs on nonbank financial corporations, such as insurance companies, pension funds, money market funds, hedge funds, and special purpose vehicles, etc., is widely recognized; however, the existing list of FSIs as agreed by the Executive Board only includes indicators that measure the relative size of the other financial corporations sector as a whole rather than risks faced by that sector and its main subsectors.

¹⁶ Four of the proposed seven FSIs are essentially the same as those currently reported in the *GFSR*. These are: regulatory tier 1 capital to risk-weighted assets; regulatory tier 1 capital to assets; nonperforming loans to total gross loans; and return on assets.

¹⁷ See R. Barry Johnston et al. (footnote 9).

capital quality as it measures the most freely and immediately available resources to meet claims against deposit takers. The use of Tier 1 capital—a narrower and more strictly defined capital—also tends to produce more cross-country comparable data as the components of Tier 1 capital under Basel I or Basel II are subject to less national discretion than other measures of capital.¹⁸

- ***Tier 1 capital to assets.*** This indicator measures the extent to which assets are funded by deposit takers' own funds and the proportion that is funded by other sources. It is therefore an indicator of the financial leverage of deposit takers and is sometimes called the leverage ratio. It complements the measure of the capital adequacy ratios compiled using risk-weighted assets (RWAs) and is also useful for analyzing the level of return on assets and return on equity. The risk assessment used to calculate the risk-weighted assets often has a subjective element. Therefore, the regulatory Tier 1 capital to assets ratio, which takes non-risk-weighted total balance sheet assets as the denominator, provides a more homogenous indicator and is also proposed to be included in the SDDS to complement the capital adequacy ratios compiled based on the BCBS methodology.
- ***Nonperforming loans (NPLs) net of provisions to capital.*** This indicator measures the extent to which deposit takers' capital can withstand NPL-related losses. Specifically, it measures a portion of potential losses from NPLs that would have to be covered directly by deposit takers' capital. Also, it helps to detect situations where deposit takers may have delayed addressing asset quality issues—that is the provisioning for NPLs may not have been adequate. The meaningfulness and operational value of this ratio also depend on well-designed loan classification and provisioning rules and their implementation.

23. **The other four FSIs proposed for inclusion in the SDDS are indicators of asset quality, earnings and profitability, liquidity, and sensitivity to market risk, respectively.**

- ***Nonperforming loans to total gross loans.*** This indicator is often used as a proxy for asset quality. Nonperforming loans arise from deterioration in the financial health and profitability of borrowers. If the problems with asset

¹⁸ The amendments to the *Financial Soundness Indicators: Compilation Guide* (<http://www.imf.org/external/np/sta/fsi/eng/2004/guide/index.htm> and <http://www.imf.org/external/pubs/ft/fsi/guide/2008/pdf/071408.pdf>) defer to the BCBS (Basel I and Basel II) as the standards for compiling supervisory-based underlying data series used to compile FSIs.

quality are not addressed in a proper and timely manner, deposit takers will incur losses from uncollectible loans that would weaken their capital base over time and could pose risks to deposit takers' solvency.

- ***Return on assets.*** This indicator measures deposit takers' efficiency in using their assets. It is a widely used indicator of bank profitability. Over time, it can also provide information on the sustainability of deposit takers' capital position: high profitability over time will strengthen deposit takers' capital base or their capacity to withstand losses.
- ***Liquid assets to short-term liabilities.*** This indicator provides information on the liquidity available to meet short-term demand for cash. Also, it indicates the proportion of short-term liabilities that would have to be covered by asset sales if there was no access to other funding sources. This indicator can highlight excessive maturity mismatches and a need for more careful liquidity management. The level of liquidity influences the ability of a banking system to withstand liquidity shocks and prevent them from leading to solvency problems.
- ***Net open position in foreign exchange to capital.*** This indicator identifies deposit takers' exposure to exchange rate risk in relation to capital. It measures the mismatch between foreign currency asset and liability positions to assess the potential vulnerability of deposit takers' capital position to exchange rate movements.

24. **These indicators are readily available for the vast majority of SDDS countries participating in the regular reporting of FSIs for dissemination by the IMF, with data for 49 of the 67 current SDDS subscribers posted on the FSI website**

(<http://fsi.imf.org/>).¹⁹ That is, about 70 percent of subscribers already compile and disseminate these FSIs, and at least another four subscribers have indicated their willingness and capacity to do so. As of January 2010, for the seven FSIs proposed for incorporation into the SDDS and among these 49 reporters, nine subscribers do not report data on ***regulatory tier 1 capital to assets***;²⁰ three subscribers do not report data on ***nonperforming loans net of provisions to capital***; two do not report data on ***nonperforming loans to total gross loans***; four do not report data on ***liquid assets to short-term liabilities***;

¹⁹ Not all SDDS subscribers participated in the CCE, and therefore do not report FSIs for dissemination through the IMF, although in most cases information on FSIs is widely available on their websites. The data disseminated on the IMF's website are properly validated and the associated metadata documented where material deviations from recommended practices exist.

²⁰ However, this ratio can be calculated from the underlying data reported by most subscribers.

and ten do not report data on *net open position in foreign exchange to capital*. Table 2 presents the status of reporting to the IMF of the seven proposed FSIs by these 49 reporting countries participating in the SDDS. With respect to periodicity, 25 of these 49 subscribers do not yet disseminate quarterly data. It is too early to evaluate the timeliness of reporting since the website was launched only recently (July 2009). Nevertheless, reporting subscribers have made a concerted effort to improve the periodicity and timeliness of the data relating to all FSIs, although this is not currently part of the SDDS framework.

25. **Of the remaining 18 SDDS countries, several or all of the seven proposed indicators are disseminated on the websites of their respective bank supervisory agencies.** The more widely available FSIs are *return on assets* (12 countries) and *regulatory tier 1 capital to risk-weighted assets* (9 countries). Various combinations of the other five indicators are disseminated by seven countries. FSI data for 17 out of these 18 countries are published in the *GFSR*, relying on different sources, including direct reporting by countries. The methodology used by these countries will need to be documented prior to their dissemination on the SDDS website to ensure that users can assess the content and cross-country comparability of the indicators. Countries will also be contacted to request regular reporting to the IMF for dissemination of their FSIs through the Fund website.

26. **In this context, staff propose to include the above mentioned seven FSIs in the SDDS initially on an encouraged (rather than a prescribed) basis.**²¹ Under this proposal, the FSIs would represent a new data category and would be encouraged to be disseminated with quarterly periodicity and timeliness. As the definition and methodology of compilation of FSIs often differ across countries and with respect to the standard established in the Fund's amended FSI Guide, subscribers also would be encouraged to apply the Guide's methodology in compiling these indicators (see footnote 18). Consistent with other SDDS data categories, subscribers would be required both to cite this internationally accepted statistical methodology and report on material deviations from this methodology in their metadata. As an encouraged category, no transition period would be needed.

27. **While seven FSIs are being proposed for incorporation in the SDDS at this time, the other 33 indicators in the Fund's database are also useful in assessing the soundness of the financial sector.** Ongoing work on data gaps in the context of the global crisis may lead to the need for enhanced compilation and dissemination of these other FSIs. In the context of the next review of the Fund's Data Standards Initiatives, staff may return to the Board with updated proposals concerning FSIs (see paragraphs 65. - 66. ahead).

²¹ It is worth noting that "encouraged" is used in both the work on FSIs and the SDDS. Where a certain feature is designated as "encouraged" under the SDDS framework, it means that such a feature would not be binding under the SDDS, but that countries are encouraged to develop and disseminate such data categories with the indicated periodicity and timeliness. All the FSIs proposed for inclusion in the SDDS (except 2, Regulatory Tier 1 capital to assets) are considered "core" FSIs; however, the staff propose that all seven FSIs be an encouraged data category in the SDDS framework. These distinctions would be communicated to FSI compilers, SDDS stakeholders, and the general public.

Table 2: Status of Reporting of Seven Proposed FSIs by SDDS Participating Countries

No.	Country Name	Indicators ^{1/}							Periodicity ^{2/}
		1	2	3	4	5	6	7	
1	Armenia, Republic of	√	√	√	√	√	√	√	M+Q+SA+A
2	Australia (G-20)	√	√	√	√	√	√	NR	Q
3	Austria	√	√	√	√	√	√	√	A
4	Belgium	√	√	√	√	√	√	√	SA
5	Brazil (G-20)	√	NR	√	√	√	√	√	Q
6	Bulgaria	√	√	√	√	√	√	√	A
7	Canada (G-20)	√	√	√	√	√	√	NR	Q
8	Chile	√	√	√	√	√	NR	√	Q
9	China P.R., Hong Kong SAR	√	NR	√	√	√	√	NR	Q
10	Colombia	√	√	√	√	√	√	√	SA
11	Cyprus	√	√	√	√	√	√	√	Q
12	Czech Republic	√	√	√	√	√	√	√	Q
13	Denmark	√	√	√	√	√	√	√	Q / A
14	El Salvador	√	√	NR	√	√	√	√	M
15	Estonia	√	√	√	√	√	√	√	Q
16	France (G-20)	√	NR	√	√	√	√	NR	Q / A
17	Germany (G-20)	√	√	√	√	√	√	√	Q / A
18	Greece	√	√	√	√	√	√	√	Q
19	Hungary	√	NR	√	√	√	NR	√	A
20	India (G-20)	√	NR	√	√	√	√	√	A
21	Indonesia (G-20)	√	√	√	√	√	√	√	A
22	Italy (G-20)	√	√	√	√	√	NR	NR	A
23	Kazakhstan	√	√	√	√	√	√	√	SA
24	Korea, Republic of (G-20)	√	√	√	√	√	√	√	A
25	Latvia	√	√	√	√	√	√	√	A
26	Lithuania	√	√	√	√	√	√	√	Q
27	Luxembourg	√	√	NR	NR	√	√	√	A
28	Malaysia	√	NR	√	√	√	√	√	Q
29	Malta	√	√	√	√	√	√	√	Q
30	Mexico (G-20)	√	√	√	√	√	√	√	Q
31	Netherlands	√	√	NR	NR	√	√	NR	A
32	Norway	√	NR	√	√	√	√	√	Q
33	Philippines	√	√	√	√	√	√	√	SA
34	Poland	√	√	√	√	√	√	√	Q
35	Portugal	√	√	√	√	√	√	NR	Q
36	Romania	√	√	√	√	√	√	√	A
37	Russian Federation (G-20)	√	√	√	√	√	√	√	SA+A
38	Singapore	√	√	√	√	√	√	NR	Q
39	Slovak Republic	√	√	√	√	√	√	√	A
40	Slovenia	√	NR	√	√	√	√	√	A
41	South Africa (G-20)	√	√	√	√	√	√	√	A
42	Spain	√	√	√	√	√	NR	NR	SA
43	Sweden	√	NR	√	√	√	√	√	A
44	Switzerland	√	√	√	√	√	√	√	A
45	Turkey (G-20)	√	√	√	√	√	√	√	Q
46	Ukraine	√	√	√	√	√	√	√	Q
47	United Kingdom (G-20)	√	√	√	√	√	√	√	SA
48	United States (G-20)	√	√	√	√	√	√	NR	Q
49	Uruguay	√	√	√	√	√	√	√	A
		49	40	46	47	49	45	39	

1/ Indicator 1: Regulatory tier 1 capital to risk weighted assets

Indicator 2: Regulatory tier 1 capital to assets

Indicator 3: Nonperforming loans net of provisions to capital

Indicator 4: Nonperforming loans to total gross loans

Indicator 5: Return on assets

Indicator 6: Liquid assets to short-term liabilities

Indicator 7: Net open position in foreign exchange to capital

2/ M - Monthly, Q - Quarterly, SA - Semiannual, A - Annual

“√” means FSIs are being reported by country and “NR” means not reported.

Note: SDDS subscribers not included in this table do not yet report FSIs to the IMF database, but generally disseminate a range of FSIs on their own websites.

B. External Sector Statistics

Quarterly IIP

28. **While annual IIP data disseminated with three quarters timeliness meet current SDDS requirements (for example, end-2008 data would be disseminated at end-September 2009), they are too dated to be useful for surveillance.**²² The SDDS prescribes quarterly balance of payments data with quarterly timeliness. Thus, matching stocks with flows is limited to the annual figures, which is restrictive for analytical purposes.²³ Moreover, Fund and capital market analysts rely heavily on quarterly time series. Therefore, it is essential to be able to link the timely, existing quarterly balance of payments data to quarterly IIP data to obtain a full picture of external vulnerabilities. For example, if the values of securities moved sharply due to a disturbance in financial markets, these price changes would not be captured in the quarterly balance of payments data, because price changes are recorded as valuation adjustments to outstanding positions, not as transactions that are included in balance of payments accounts.

29. **Prescribing quarterly IIP data would bring consistency between the transactions and position data and consequently:** (1) improve the understanding of valuation effects on assets and liabilities; (2) place external liabilities data in the context of external assets data; (3) allow more frequent observation of vulnerabilities, such as the buildup of leverage in the system; (4) highlight interconnections between countries, such as between oil-exporting countries with current account surpluses and their financial exposure to countries with current account deficits; (5) support broader analytical frameworks, such as the balance sheet approach; and (6) provide more up-to-date information.

30. **As of November 2009, 37 SDDS subscribers (55 percent) report quarterly IIP data (with quarterly timeliness) through their National Summary Data Pages (NSDPs), and another seven do so, but with a lag greater than one quarter.** Two disseminate the data semi-annually; 12 disseminate annual data with a delay of six months; and the rest of the subscribers meet the SDDS requirements of annual periodicity and timeliness of three quarters.

31. **Therefore, consistent with the G-20 report's recommendation to increase reporting of quarterly IIP, staff propose that the SDDS be modified to prescribe the IIP**

²² The current SDDS framework calls for quarterly periodicity and quarterly timeliness on an encouraged basis.

²³ See "Financial Sector and Bilateral Surveillance – Toward Further Integration"
<http://www.imf.org/external/np/pp/eng/2009/082809a.pdf>

with quarterly periodicity and quarterly timeliness. Roughly two-thirds of subscribers already disseminate these data with quarterly frequency, however staff propose that a four year transition period apply, so that the remaining subscribers have adequate time to develop the necessary data collection and compilation tools required to meet the proposed prescription.

Remaining Maturity of External Debt

32. **The recent global financial crisis has highlighted the need for more information on external liquidity.** Clearly, policymakers need to monitor roll-over and liquidity risk. Particularly during periods of financial market stress, creditors may decline to roll over or refinance debt that is coming due, resulting in financial distress for borrowers. In addition, the demand for data on the amount of debt that is falling due in the short term has increased as a result of emergence of new techniques developed for detecting potential liquidity mismatches in an economy. For example, the Greenspan-Guidotti rule²⁴ suggests that the level of reserves should be at least equal to the level of debt that is coming due in the coming year, that is, the ratio of reserves-to-short term debt should be equal to, or greater than, one. However, data are not widely available on the level of external debt coming due in the coming year that is needed for calculating this ratio.

33. **The above data gap exists because, in general, economic statistics on external debt tend to be compiled on an original maturity basis, i.e., the maturity at the time of issuance. To address the need for data on the amount of external debt coming due in the next 12 months, information on the portion of long-term debt that comes due in one year or less is needed.** Moreover, for liquidity analysis purposes, information would be needed on the amount of principal and interest that is due for payment in one year or less. The short-term external debt on a remaining maturity basis could be calculated by adding together: (1) the value of outstanding short-term external debt (based on original maturity, which is identifiable from the gross external debt position), with (2) the value of long-term external debt (based on original maturity) due to be paid in one year or less. However, the latter would require new data collection for many countries.

34. **Table 3 identifies the minimum amount of detail that staff recommend by sector (for principal and interest), and is a simplified version of, but not a substitute for, the Debt Service Payment Schedule already presented in the SDDS Guide as an SDDS**

²⁴ Coined after former Federal Reserve Chairman, Alan Greenspan, and the former Deputy Finance Minister of Argentina, Pablo Guidotti, who proposed this rule as a simple guideline for policymakers. Greenspan, Alan (1999). “*Currency reserves and debt.*” Speech before the World Bank Conference on Recent Trends in Reserves Management, Washington, D.C., April 29, 1999.

encouraged item (see <http://dsbb.imf.org/Applications/web/sddshome/>, Table 6.2b.). The methodological references for both tables are *External Debt Statistics: Guide for Compilers and Users* (External Debt Guide) and the IMF's sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)*, both available on: <http://www.imf.org/external/data.htm#guide>.

**Table 3: External Debt: Principal and Interest Payments Due in One Year or Less
(in millions of currency units)**

By sector	
General government	
Principal	
Interest	
Monetary authorities	
Principal	
Interest	
Banks	
Principal	
Interest	
Other sectors	
Principal	
Interest	
Direct investment-Intercompany lending	
Principal	
Interest	
Total	
	Principal
	Interest

35. Thus, considering the data needs that have emerged, staff propose that the SDDS be modified under the quarterly external debt category to encourage dissemination of data on principal and interest payments due in one year or less with quarterly timeliness (as shown in Table 3). As an encouraged category, no transition period would be needed to incorporate Table 3 in the SDDS. In addition, to further expand data needed for liquidity analysis and to complement the enhancement discussed above, staff would redouble their efforts to encourage subscribers to provide the external debt service profile (Table 6.2b.).

C. Challenges facing SDDS subscribers

36. Challenges facing compilers who do not already disseminate these seven FSIs, quarterly IIP data and external debt by remaining maturity, might include: the development of new data sources (including the design and implementation of new data gathering instruments, as well as difficulties in obtaining comprehensive information from data providers on a timely basis); and resource constraints to develop, collect, compile, and disseminate the statistics. In some limited instances, new legal instruments may need to be developed. Nevertheless, based on the relatively large number of subscribers that already disseminate these data, or have expressed their ability to do so, these challenges could be addressed by subscribers over the medium term, whether as

newly encouraged data categories (FSIs and Table 3 on external debt), or as newly required data (quarterly IIP). To help SDDS subscribers address these challenges, STA would give priority to providing technical assistance in these areas.

IV. DEVELOPMENTS SINCE THE SEVENTH REVIEW

A. Reserves Template (especially exchange-traded futures)

37. **Following the Executive Board discussion on the *Seventh Review of Data Provision to the Fund for Surveillance Purposes*, in May 2008,²⁵ the Board agreed during the *Seventh Review of the Fund's Data Standards Initiatives* to modify the Reserves Template, in particular to capture data on exchange-traded futures (including exposures settled in domestic currency).** These modifications took effect in August 2009 with data reported pertaining to July 2009. Thus, the reporting of financial derivatives in the Reserves Template became consistent with the May 2008 amendment to Annex A, Article VIII, Section 5 of the IMF Articles of Agreement.²⁶ All SDDS subscribing countries are now required to use the new form and report information on exchange-traded futures, if they undertake these financial transactions.

38. **In addition, the Board agreed to the IMF staff's proposal to update (not to completely redraft) the *International Reserves and Foreign Currency Liquidity: Guidelines For A Data Template (Guidelines)* to take account of changes that were being introduced in *BPM6* and of staff experience accumulated in monitoring SDDS subscribers' observance of the Reserves Template.** Progress in the update of the *Guidelines* has been ongoing (in tandem with other intensive work in other reserves-related areas) and is expected to be completed at the end of 2010. As previously agreed, this work will be conducted in cooperation with the Reserve Assets Technical Expert Group.²⁷

39. The work to date and the work ahead on the Reserves Template, including work in connection with the allocation of SDRs (see next section) were discussed at the Twenty-Second Meeting of the IMF Committee on Balance of Payments Statistics, held in Shanghai,

²⁵ <http://www.imf.org/external/np/pp/eng/2008/031708.pdf>, paragraphs 33-34.

²⁶ See Selected Decision No. 14107-(08/38), May 2, 2008, which amends decision No. 13183-(04/10), January 30, 2004.

²⁷ The Reserve Assets Technical Expert Group was one of the four technical expert groups established under the auspices of the IMF Balance of Payments Committee to advise the IMF on specific issues related to the updating of the *Balance of Payments Manual*. The other three expert groups were the Balance of Payments Technical Expert Group, Direct Investment Technical Expert Group, and Currency Unions Technical Expert Group.

People's Republic of China, during November 2-4, 2009
<http://www.imf.org/external/bopage/stindex.htm>).

B. SDR allocations

40. **Prior to the recent allocation of SDRs, agreement was achieved to use *BPM6* to record these transactions in the Fund accounts and members' macroeconomic statistics.**

A set of frequently asked questions was prepared and posted on the Fund's website: <http://www.imf.org/external/np/exr/faq/sdrallocfaqs.htm> and letters to IMF Governors and statistical correspondents were sent explaining the recommended methodology for recording of the new allocation in a member's macroeconomic statistics.

41. **In the case of external sector statistics, under *BPM6*, new allocations of SDRs to participants in the IMF SDR Department are recorded as increases in gross reserve assets and as increases in long-term liabilities.** These guidelines were adopted in 2008 by the United Nations Statistical Commission and the IMF's Committee on Balance of Payments Statistics in the process of the revision of the *System of National Accounts (SNA)* and the *BPM6*, respectively. Main changes in the treatment of SDRs were the recognition of SDR allocations as long-term debt liabilities, and the inclusion of the new allocations in balance of payments transactions (as increases in assets (holdings) and increases in liabilities (allocations of SDRs)) instead of as valuation adjustments to international investment positions.

42. **Staff have recommended that countries reflect the new allocations of the SDRs in their balance of payments and IIP accounts for the third quarter of 2009.**²⁸ The IIP accounts should also reflect all previously outstanding SDRs. For subscribers of the SDDS, the increase in SDR holdings is being reflected in reserves assets data reported on the Reserve Template beginning with data for end-August 2009.

43. **Similarly, under *BPM6*, the gross external debt position of a member country should include a debt liability for all SDR allocations. This differs from the *BPM5* methodology and the *External Debt Guide*, which do not recommend recording liabilities (neither equity nor debt) for allocations of SDRs.** The *External Debt Guide* will be updated in the coming years, but STA is already working with the World Bank and others to advance the timetable for aligning the data in the IMF/World Bank Quarterly External Debt Statistics (QEDS) database and in the Joint External Debt Hub (JEDH) with *BPM6*. These changes are reflected beginning with the Q3 2009 data release of January 2010 in the QEDS, and are expected to be disseminated soon in the JEDH.

²⁸ A general allocation of SDR 161.2 billion was implemented on August 28, 2009, and a special one-time allocation of SDR 21.5 billion took effect on September 9, 2009. These correspond to an allocation of about \$250 billion in August and \$33 billion in September 2009.

C. Progress with other modifications to the SDDS and GDDS

SDDS: Citations and deviations from internationally accepted statistical methodologies

44. **Substantial progress has been achieved regarding the change that was agreed at the time of the Seventh Review of the Fund's Data Standards Initiatives to add explicit citations to internationally accepted statistical methodologies and deviations in subscribers' metadata.** The SDDS legal text posted on the DSBB was amended accordingly, and a list of the internationally accepted statistical methodologies was also made available to SDDS subscribers and users through the DSBB.

45. **A desk study was completed by staff during mid-2009, which identified the cases where explicit citation of the internationally accepted statistical methodologies and/or deviations from them needed to be added to the metadata currently posted on the DSBB.** The results of this desk study were communicated to SDDS coordinators in the October monthly observance reports, with a request to make these explicit citations and note the deviations before end-2009, in time for the annual certification exercise scheduled for January 2010.

46. **Subscribers' progress in this exercise is closely monitored by staff on a monthly basis. Each successive monthly observance report provides reminders to the SDDS subscribers to complete the remaining gaps in the exercise.** As of now, a number of subscribers still need to modify sets of metadata to fully incorporate citations and deviations. Staff have also informed subscribers that in instances where, in staff's judgment, a subscriber does not provide clear citations and metadata on deviations from internationally accepted statistical methodologies, the SDDS nonobservance procedures would apply.

Metadata certification

47. **The Board's decision²⁹ to change the regular SDDS metadata certification from quarterly to annual that was taken at the Seventh Review was implemented by staff starting with 2009.** Accordingly, the SDDS legal text was amended to request SDDS subscribers to certify their metadata annually, one month after the end of the calendar year. Thus, the first annual metadata certification is for 2009, and it was due by January 31, 2010. The results of this certification exercise will be recorded in the subscribers' Annual Observance Reports for 2009, which will be published on the DSBB by end-May 2010.

²⁹ *Selected Decisions and Selected Documents of the International Monetary Fund; Thirty-Third Issue*, Washington, DC, July 2009. <http://www.imf.org/external/pubs/ft/sd/index.asp?decision=EBM/96/36>.

Data quality assessments (including requested Data ROSCs)

48. **At the Seventh Review, Directors agreed that SDDS subscribers should be encouraged to conduct and publish a data quality assessment at least once every 7–10 years, either through an IMF-conducted data ROSC or a comparable international assessment (such as the peer reviews conducted for European countries by Eurostat, or a peer review by an autonomous agency).** Staff have written to all subscribers that have not published such an assessment within this time frame and roughly half have already requested that a new Data ROSC be undertaken soon (that is, in FY2010 or 2011).

49. **A few subscribers however have not yet responded; one has declined to conduct a Data ROSC assessment at this time. Several other SDDS countries have requested a data ROSC update, paving the way for a higher number of data ROSCs to be conducted (including requests for four G-20 countries) than has been the case for the last several years.** A few countries that have not yet had a Data ROSC have indicated their intention to undertake the data ROSC in the near future.

GDDS alignment with the SDDS

50. **During the Seventh Review on Fund’s Data Standards Initiatives the Board agreed to align the GDDS more closely with the SDDS.** In July 2009, the GDDS legal text was updated to reflect this alignment, and it now specifies the same data categories, with periodicities and timeliness that are slightly less demanding, as outlined at the time of the Seventh Review.

51. **Similarly, the legal text now recommends that GDDS participants establish an NSDP on the internet, which could be linked to the DSBB electronically through “hyperlinks” on the latter.** It is recommended that a participant’s NSDP should contain the most recent observation for data categories included in the GDDS that are available as well as the previous observation. Where possible, these data categories should be linked through “hyperlinks” to additional information available on other websites. Responsibility for the data on an NSDP rests with the participant. Furthermore, it is recommended that participants disseminate on the internet an Advance Release Calendar showing the release dates of these data for the current month and for the following three months.

52. **Staff have also initiated two projects: one to convert the GDDS metadata to be more in line with the SDDS on the DSBB, and another to update the GDDS guide on the web.** The first project envisages the use of the Data Quality Assessment Framework (DQAF) to reformat the existing GDDS metadata. This reformatting will not only allow the GDDS metadata to be searched by DQAF codes, but will also better align these metadata to the SDDS metadata, which are already reformatted using the DQAF. Under the second project

the GDDS guide will be updated to incorporate the recent changes in the GDDS that align it with the SDDS. The updated GDDS guide is also expected to intensify the process of graduation from the GDDS to the SDDS, as the system is better aligned with the standard. These projects are expected to take about another year for completion.

Recent methodologies—2008 SNA and BPM6

53. **During the December 2008 Board discussion of the Fund’s Data Standards Initiatives, the Board approved a new SDDS prescription requiring subscribers to explicitly reference internationally accepted statistical methodologies and deviations from these methodologies in their SDDS metadata.** Since that discussion, the international statistical community has updated two key international methodologies: the *2008 SNA* and the *BPM6*. Thus, staff propose modifications to the SDDS to modify the prescriptions to specific previous manuals and take into account these new developments. It will be expected that subscribers would adopt the new methodologies, but only after given ample time to do so.

54. **Specifically, the significant changes resulting from the launch of the *2008 SNA* and the *BPM6* include the sectoral distribution of external debt, which is presently prescribed on a *BPM5* basis in the SDDS.** This should be updated to the *BPM6* basis, which uses the central bank rather than monetary authority as the relevant institutional unit, and separately identifies nondepository financial institutions. As the importance of the latter institutions has grown, the *BPM6* has recognized the need for separate data. In addition, with the adoption of the *BPM6*, there are changes in the components of external debt (e.g., liabilities for SDR allocations). The staff propose that the SDDS legal text be updated to refer to the latest available internationally accepted statistical methodology, rather than a specified version of the manual. Technical assistance will be provided by the IMF to collect external debt on the *BPM6* basis.

V. WORK PROGRAM PROPOSAL AND RESOURCE IMPLICATIONS

55. **While the cost of disseminating financial indicators through the SDDS will vary across countries, many countries have already incurred most of the fixed costs that are involved.** Furthermore, many countries have already weighed the costs and benefits of reporting these data, and have nonetheless favored their compilation and dissemination. For those countries that do not disseminate quarterly IIPs, some of the proposed FSIs, or external debt on a remaining maturity basis, based on preliminary estimates given during the consultations with SDDS subscribers, staff believe that subscribers will absorb those costs over extended periods of time. Moreover, the proposed changes to the SDDS framework are likely to have resource implications for the Fund, including support to assist SDDS subscribers.

VI. THE EIGHTH REVIEW

A. Timing of the Eighth Review

56. **This section provides the rationale for a staff proposal to accelerate the Eighth Review to within 18–24 months of this Board discussion.** The main reason is to take into account the international discussions on the data needed for policy purposes (such as the use of sectoral balance sheets) and attempt to address these needs by the international statistical community, allowing the standard to adjust to the changing economic circumstances, particularly subsequent to the recent global financial crisis, and review their implications on the existing data categories. It would also provide an opportunity to review progress with the modifications proposed in this Board paper and to reevaluate the traditional FSIs.

57. **The view that emerged from the financial crisis is that traditional FIs may not provide the most effective warning signals, and may need to be re-evaluated.** The need to review the FSIs was reported to the Executive Board in *Lessons of Financial Crisis for Future Regulation of Financial Institutions and Markets and for Liquidity Management*³⁰ and also discussed in the *April 2009 GFSR*, Chapter 3. Ongoing work at the IMF focuses on re-evaluating the list of FSIs, increasing the frequency of FSI reporting, and constructing additional FSIs to address the identified data gaps.³¹ Therefore, this work would provide the basis for adapting further the SDDS and maintaining its relevance.

58. In addition, requirements of the Fund's multilateral surveillance and developments in regulatory and supervisory frameworks over the coming months as well as the ongoing work to strengthen the Fund's mandate lead to revisiting the SDDS sooner than originally planned.

B. Possible Issues for the Eighth Review

The potential topics for the Eighth Review are delineated below.

Using Sectoral Balance Sheets

59. **The global crisis has reinforced the importance of integrated economic data, both stocks and flows, so that the impact of developments in one sector of the economy on other sectors can be reliably analyzed.** Further, policy makers need to remain cognizant of the vulnerabilities evident in stock data as well as the associated flows. These needs are

³⁰ <http://www.imf.org/external/np/pp/eng/2009/020409.pdf>

³¹ This is also consistent with the spirit of the Report on *The Financial Crisis and Information Gaps*, Report to the G-20 Finance Ministers and Central Bank Governors (October 2009).

recognized in the G-20 report on the Financial Crisis and Information Gaps (noted above), which calls for international agencies to develop a strategy to promote the compilation and dissemination of the balance sheet approach outputs, flow of funds, and sectoral data more generally by countries.

60. Over the past 15 years, the statistical community has made significant progress in the integration of macroeconomic databases around the central organizing framework of the SNA. The development of a consistent and coherent economic statistics system has been critically important to cover the main macroeconomic datasets: real sector (national accounts and prices); government; monetary and financial; and external. Specifically, the definition of residence, economic sectors, activities, and instruments are harmonized, valuation methods (including accrual accounting) are consistent; and positions and flows are integrated across sectors within this framework.

61. Progress on balance sheets has been accomplished particularly with regard to monetary and financial statistics and the IIP, allowing staff to promote the balance sheet approach. IMF staff has collaborated with over 100 member countries to disseminate harmonized statistics (on stocks and flows) using a single report form for monetary and financial statistics, and the number of IIP reporters has increased to significantly more than 100 economies. Significant gaps remain on nonbank financial institutions, a sector that proved to be a source of vulnerability during the recent global crisis, general government, nonfinancial corporations, and household sectors. Nevertheless, progress is being achieved in some of these areas. For general government debt, the statistical community (through the Task Force on Finance Statistics, with inputs from the IMF) has been discussing the implementation of a public sector template that could serve as a vehicle to collect and eventually disseminate general government (and possibly broader public sector) data on debt stocks (and other liabilities and assets).

62. Consistent with the G-20 recommendations, staff will work on enhancing the IMF's Coordinated Portfolio Investment Survey, which provides rich information on cross-country financial linkages by providing data on portfolio investment (debt and equity) on a from-whom-to-whom basis. Enhancements may include increasing the number of participating countries, increasing the frequency, or improving the timeliness of release of results.

63. Balance sheet analysis has become a mainstay of surveillance, particularly in the context of the ongoing efforts to improve data timeliness and frequency. The renewed interest in this analytical framework has re-emerged as public sector balance sheets are at the center of **vulnerabilities** in a range of countries, especially during the crisis. Given the growing policy interest and both the conceptual and compilation progress made by statisticians, staff propose to work more intensively with countries, and in cooperation with other international agencies, to promote the compilation of integrated sectoral information

with the intention of returning to the Executive Board at the time of the Eighth Review with recommendations for strengthening the SDDS in this regard, based on the progress made by countries.

FSIs

64. **Staff will monitor the progress SDDS subscribers are making in reporting FSIs. If subscribers express interest in moving from an encouraged reporting to a prescribed one**, this could be brought up in the context of the Eighth Review. For the time being, “encouraged” is very much in line with countries’ views (see paragraph 71. ahead)

65. **With respect to improving data coverage, the G-20 Report on the Financial Crisis and Information Gaps contained two recommendations related to FSIs.** Recommendation 2 involves increasing the number of countries disseminating FSIs—with special emphasis on G-20 members—and enhancing the frequency and timeliness of the dissemination. STA is currently working on this recommendation, with the objective of enhancing the existing data collection to include high-frequency and timely data that will allow meaningful cross-country comparisons based on historical series. Recommendation 3 relates to the development of standard measures of dispersion and tail risks. MCM is expected to take the lead in implementing this recommendation, with STA supporting the work through additional accounting balance sheet data and eventually collecting measures of dispersion.

66. **Also, in the FSI work program leading to the Eighth Review, staff will examine the criteria for selecting additional FSIs for inclusion in the SDDS and may return to the Board with an updated list of FSIs.** Based on the preliminary work already completed, staff would consider to propose the following tentative list of additional FSIs for inclusion in the SDDS in the context of the Eighth Review:

- For deposit takers, a relevant additional indicator is *customer deposits to total (noninterbank) loans*, which is used to detect liquidity problems and potential liquidity stress in the banking system.
- For *other financial corporations*, useful information can be obtained from *financial assets of other financial corporations to total financial system assets*, which is a measure of the relative importance of the other financial corporation sector within the domestic financial system.
- For nonfinancial corporations, three FSIs may be considered:
 - *Total debt to equity*, which is a measure of corporate leverage, i.e., the extent to which activities are not financed out of own funds;

- ***Return on equity***, which is a profitability ratio commonly used to capture efficiency in using capital; and
 - ***Number of bankruptcy proceedings initiated***, which is a simple numerical measure showing a trend of the business climate, although heavily influenced by the quality and nature of national bankruptcy legislation.
- Three possible FSIs relating to households and real estate markets could be considered:
 - ***Household debt to Gross Domestic Product (GDP)***, which measures the vulnerability of households to economic and financial market shocks;
 - ***Residential real estate loans to total gross loans***, which identifies deposit takers' exposure to the residential real estate sector; and
 - ***Residential real estate prices***, which can help identify the emergence of potential bubbles in the real estate market, as well as market corrections and market recoveries.

67. **Staff would also continue to explore other FSIs that may be deemed useful for an assessment of financial system soundness and could be considered for inclusion in the SDDS** at the time of the Eighth Review. In particular, staff will follow up on the evaluation of ongoing work on FSIs mentioned above. Moreover, the financial crisis has prompted the need to review the current 40 FSIs for their usefulness in assessing the soundness of financial systems or for early warning purposes. In addition, requirements of the Fund's multilateral surveillance and developments in regulatory and supervisory frameworks over the coming months, e.g., changes in Basel requirements, may provide further insights into other relevant indicators. The work program leading to the Eighth Review will involve a careful examination of the analytical and research work undertaken with respect to lessons from the financial crisis and set out relevant options for selecting additional indicators for assessing financial sector soundness. The Eighth Review should also address the importance of high-frequency data for the Fund's ongoing and future work on more timely and newer market-based FSIs, and could recommend the use of high-frequency market data to provide an early view of emerging risks and other financial sector developments. All this may lead to a revision of the current FSI list, including the reallocation of existing FSIs between core and encouraged categories, and the addition of new FSIs which in turn might have implications for the inclusion of FSIs in the SDDS.

Finally, exploratory work might be undertaken on the merits of retaining the FSIs in the SDDS or creating a new framework that could evolve from the idea of new Financial Data Dissemination Standard put forward in the chapeau paper on the Fund's mandate.

Housing

68. **A key ingredient for good information about household wealth, its change over time, and for the vulnerability of households' financial position are data on the stocks of dwellings and the associated price levels and their changes over time.** Further, the value of commercial property is relevant not just for the wealth of the nonfinancial corporate sector, but also for financial stability more generally, given that commercial property accounts for a significant share of collateralized lending for many banks. Where data exist, their international comparability is limited. Work is under way to produce a handbook on real estate price indices led by Eurostat under the auspices of the Inter-Secretariat Working Group on Price Statistics (UN/ECE, ILO, IMF, OECD, World Bank, and Eurostat). The BIS has collected a large number of property price indicators from various countries around the world. In the future, this work may lead to another useful extension to the SDDS (likely on an encouraged basis).

VII. CONSULTATIONS

A. G-20 Users' Conference

69. **The G-20 Users' Conference, noted above, considered that FSIs are a necessary part of the dataset for use in financial stability analysis, supporting both inclusion in the SDDS and expanding country coverage.** Some ideas for reprioritizing were discussed, but in the view of the participants any review of the FSI list should proceed cautiously, with the principal focus maintained on banks.

B. Subscribers

70. **Multiple consultations were held with SDDS coordinators and IMF staff to gather preliminary reactions to the proposals outlined in this paper.** All SDDS subscribers were invited to these consultations, which were held in October 2009, via conference calls and electronic media. More than 25 percent of SDDS subscribers provided feedback.

71. **SDDS coordinators were in broad agreement with the proposals, but stressed the need to keep the FSI data category on an encouraged basis in the SDDS for two main reasons.** First, the list of FSIs does not capture the information on the statistical distribution of these indicators (to capture the tails). Second, they may not be as useful as predictors of

crises (they may be inefficient early warning signals), but may provide relevant information on a subscriber's ability to withstand a crisis. In addition, many subscribers noted that the importance of the individual indicators selected may shift over time and the SDDS framework should remain flexible to incorporate these priorities, as they develop and compilers learn more from experience.

72. Coordinators were generally supportive of the external sector statistics proposal on the quarterly IIP, with most stating that they already provide these data via the DSBB or elsewhere (mostly national websites). On the other hand, reactions to the external debt by remaining maturity were mixed. About half already provide such data elsewhere, including through the QEDS (supplementary Table 3.1)³², and some of these suggested that incorporating a table, such as 3.1 might be the simplest solution to incorporate the information in the SDDS. Nevertheless, some coordinators, including ones that report Table 3.1, strongly advocated keeping the external debt data in the SDDS in a single table, with sublines, as suggested by the staff. Subscribers that did not already compile these data noted that it might be difficult to do so, mostly due to the reporting burden on data sources, but also because of resource constraints. Many thought that these issues could be overcome over the medium term, especially in the ECB area, if related regulations and reporting requirements were modified. The ECB stated its willingness to collaborate with the Fund on such an endeavor.

C. FSI reference group

73. The implementation of the FSI project has been a collaborative effort of staff of the IMF and other international and regional institutions. To formalize this collaboration, in the context of work leading to the Coordinated Compilation Exercise (CCE), STA created a CCE/FSI Reference Group, composed of 17 international and regional agencies. The Reference Group held three meetings to discuss the *FSI Guide* and agreed on the modalities for disseminating FSI data by the IMF.

74. The Reference Group meetings provided (1) a forum for the exchange of information on the work of various institutions in the area of FSIs and in related data areas; (2) opportunities for Fund staff to present to the Reference Group developments in IMF's FSI work, including the methodology for compiling FSIs; and (3) opportunities to identify areas where harmonization of data compilation and reporting methodologies was needed in order to minimize duplication of effort on the part of countries and institutions.

³²<http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,contentMDK:20721958~menuPK:4704607~pagePK:64168445~piPK:64168309~theSitePK:1805415,00.html>

75. **Staff will continue to collaborate with the Reference Group, and in particular with other institutions which are undertaking projects that have important implications for FSIs and/or are providing technical assistance to their members with the compilation of FSIs.** Prior to the Eighth Review, further consultation meetings may be held with the FSI Reference Group to discuss progress with the FSI work and related new data initiatives.

D. Capital Markets and others

76. **Staff established an informal capital markets advisory group, based on contacts with investment banks, credit rating agencies, and research institutions, in Asia, Europe, and North America.** Discussions with these agents suggest broad support for incorporating the proposals in the SDDS, as outlined above. Some capital market players advocated extending the list of encouraged FSIs to be included in the SDDS to the entire set of 40 indicators; however, this suggestion was deemed excessive by most group participants as an initial implementation of this data category. Group participants endorsed the idea of incorporating external debt by remaining maturity, but wondered if compilers would have that information readily available for dissemination. In addition, the informal advisory group supported further extensions of the SDDS to cover even more data, but most thought that this might best be taken up in the context of the Eighth Review of the Standard.

VIII. ISSUES FOR DISCUSSION

A. Board issues for discussion include:

- *Do Directors agree that the seven financial soundness indicators identified by the staff during consultations since the Seventh Review Board discussion are appropriate for incorporation in the SDDS as a new data category on an encouraged basis?*
- *Do Directors agree that it is appropriate for the SDDS to be modified to prescribe the IIP with quarterly periodicity and quarterly timeliness (rather than annual periodicity and 3 quarters timeliness)?*
- *Do Directors agree that it is appropriate to incorporate a new table on external debt on a remaining maturity basis, on an encouraged basis, in the SDDS?*
- *Do Directors agree that staff update the SDDS legal text to reflect the modifications due to the launch of the 2008 SNA and BPM6, giving subscribers ample time to implement the changes recommended by these new manuals?*
- *Do Directors agree that the Eighth Review should be held within 18–24 months?*

Annex 1: FSIs Currently Compiled by Reporting Countries

Indicator Number	Descriptions	Number of Reporting Countries
Core FSIs for Deposit Takers		
I1	Regulatory capital to risk-weighted assets	48
I2	Regulatory Tier 1 capital to risk-weighted assets	49
I3	Nonperforming loans net of provisions to capital	46
I4	Nonperforming loans to total gross loans	47
I5	Sectoral distribution of loans to total loans	43
I6	Return on assets	49
I7	Return on equity	49
I8	Interest margin to gross income	49
I9	Noninterest expenses to gross income	49
I10	Liquid assets to total assets	47
I11	Liquid assets to short-term liabilities	45
I12	Net open position in foreign exchange to capital	39
Encouraged FSIs for Deposit Takers		
I13	Capital to assets	40
I14	Large exposures to capital	27
I15	Geographical distribution of loans to total loans	27
I16	Gross asset position in financial derivatives to capital	28
I17	Gross liability position in financial derivatives to capital	28
I18	Trading income to total income	37
I19	Personnel expenses to noninterest expenses	40
I20	Spread between reference lending and deposit rates	29
I21	Spread between highest and lowest interbank rates	13
I22	Customer deposits to total (non-interbank) loans	37
I23	Foreign-currency-denominated loans to total loans	35
I24	Foreign-currency-denominated liabilities to total liabilities	34
I25	Net open position in equities to capital	17
Encouraged FSIs for Other Financial Corporations		
I26	OFC's financial assets to total financial assets	20
I27	OFC's financial assets to GDP	18
Encouraged FSIs for Nonfinancial Corporations		
I28	Total debt to equity	15
I29	Return on equity	14
I30	Earnings to interest and principal expenses	7
I31	Net foreign exchange exposure to equity	2
I32	Number of bankruptcy proceedings initiated	10
Encouraged FSIs for Households		
I33	Household debt to GDP	14
I34	Household debt service and principal payments to income	8
Encouraged FSIs for Market Liquidity		
I35	Average bid-ask spread in the securities market ^{1/}	10
I36	Average daily turnover ratio in the securities market ^{1/}	13
Encouraged FSIs for Real Estate Markets		
I37	Residential real estate prices (index number)	19
I38	Commercial real estate prices (index number)	8
I39	Residential real estate loans to total loans	25
I40	Commercial real estate loans to total loans	16

Source: FSI Website.

^{1/} Or in other markets that are most relevant to bank liquidity, such as foreign exchange markets.

Annex 2: Financial Soundness Indicators—Concepts and Definitions

Code	Indicator Name	Description
Deposit-Takers: Core Set		
11	Regulatory capital to risk-weighted assets	This FSI is calculated using total regulatory capital as the numerator and risk-weighted assets as the denominator. Data are compiled in accordance with the guidelines of either Basel I or Basel II. It measures the capital adequacy of deposit takers. Capital adequacy and availability ultimately determine the degree of robustness of financial institutions to withstand shocks to their balance sheets.
12	Regulatory Tier 1 capital to risk-weighted assets	The data for this FSI are also compiled in accordance with the guidelines of either Basel I or Basel II. It measures the capital adequacy of deposit takers based on the core capital concept of the Basel Committee on Banking Supervision (BCBS).
13	Nonperforming loans net of provisions to capital	This FSI is calculated by taking the value of nonperforming loans (NPLs) less the value of specific loan provisions as the numerator and capital as the denominator. Capital is measured as total capital and reserves in the sectoral balance sheet; for cross-border consolidated data, total regulatory capital can also be used. This FSI is a capital adequacy ratio and is an important indicator of the capacity of bank capital to withstand losses from NPLs.
14	Nonperforming loans to total gross loans	This FSI is calculated by using the value of NPLs as the numerator and the total value of the loan portfolio (including NPLs, and before the deduction of specific loan-loss provisions) as the denominator. This FSI is often used as a proxy for asset quality and is intended to identify problems with asset quality in the loan portfolio.
15	Sectoral distribution of loans to total loans	This FSI is calculated using lending to each of the institutional sectors reported in the sectoral balance sheet of the deposit takers as the numerators and total gross loans as the denominator. This FSI is an asset quality ratio. It provides information on the distribution of loans (including NPLs and before the deduction of specific loan-loss provisions) to resident sectors and to nonresidents. Lack of sectoral diversification in the loan portfolio signals the potential existence of an important vulnerability in the financial system.
16	Return on assets	This FSI is calculated by dividing net income before extraordinary items and taxes (as recommended in the FSI Guide) by the average value of total assets (financial and nonfinancial) over the same period. This FSI is an indicator of bank profitability and is intended to measure deposit takers' efficiency in using their assets.
17	Return on equity	This FSI is calculated by dividing net income before extraordinary items and taxes by the average value of capital over the same period. Capital is measured as total capital and reserves as reported in the sectoral balance sheet; for cross-border consolidated data, Tier 1 capital can also be used. This FSI is a bank profitability indicator and is intended to measure deposit takers' efficiency in using their capital.
18	Interest margin to gross income	This FSI is calculated by using net interest income as the numerator and gross income as the denominator. It is a profitability ratio, which measures the relative share of net interest earnings—interest earned less interest expenses—within gross income. In the case of banks with low leverage, this FSI will tend to be higher.
19	Noninterest expenses to gross income	This FSI is a profitability ratio, which measures the size of administrative expenses within gross income—that is, it measures the efficiency of deposit takers' use of resources.

Code	Indicator Name	Description
I10	Liquid assets to total assets (liquid asset ratio)	This FSI is calculated by using the core measure of liquid assets as the numerator and total assets as the denominator. The ratio can also be calculated using the broad measure of liquid assets as the numerator. This FSI is a liquid asset ratio, which provides an indication of the liquidity available to meet expected and unexpected demands for cash. The level of liquidity indicates the ability of the deposit-taking sector to withstand shocks to their balance sheet.
I11	Liquid assets to short-term liabilities	This FSI is calculated by using the core measure of liquid assets as the numerator and short-term liabilities as the denominator. The ratio can also be calculated by taking the broad measure of liquid assets as the numerator. This FSI is a liquid asset ratio and is intended to capture the liquidity mismatch of assets and liabilities, and provides an indication of the extent to which deposit takers can meet the short-term withdrawal of funds without facing liquidity problems.
I12	Net open position in foreign exchange to capital	The net open position in foreign exchange should be calculated based on the recommendation of the BCBS. Capital should be total regulatory capital or Tier 1 capital as net open position in foreign exchange is a supervisory concept. This FSI is an indicator of sensitivity to market risk, which is intended to show deposit takers' exposure to exchange rate risk compared with capital. It measures the mismatch of foreign currency asset and liability positions to assess the vulnerability to exchange rate movements.
Deposit-Takers: Encouraged Set		
I13	Capital to assets	This FSI is the ratio of capital to total assets, without the latter being risk weighted. Capital is measured as total capital and reserves as reported in the sectoral balance sheet; for cross-border consolidated data, Tier 1 capital can also be used. It indicates the extent to which assets are funded by other than own funds and is a measure of capital adequacy of the deposit-taking sector. It complements the capital adequacy ratios compiled based on the methodology agreed to by the BCBS. Also, it measures financial leverage and is sometimes called the leverage ratio.
I14	Large exposures to capital	This FSI is calculated by using the value of large exposures as the numerator and capital as the denominator. From a supervisory point of view, large exposures are defined as one or more credit exposures to the same individual or group that exceed a certain percentage of regulatory capital, such as 10 percent. Capital should be total regulatory capital or Tier 1 capital. This is an asset quality ratio, which is intended to identify vulnerabilities arising from the concentration of credit risk.
I15	Geographical distribution of loans to total loans	This FSI is calculated by using loans distributed geographically (by region, country, or jurisdiction) as the numerators and total gross loans as the denominator. The suggested regional classification follows that used in the IMF's World Economic Outlook. This FSI is an asset quality ratio, which monitors credit risk arising from exposures to particular (groups of) countries, and helps to assess the impact of adverse events in these countries on the domestic financial system. It is a measure of concentration risk of the deposit takers.
I16	Gross asset position in financial derivatives to capital	This FSI is calculated by using the market value of financial derivative assets as the numerator and capital as the denominator. Capital is measured as total capital and reserves as reported in the sectoral balance sheet; for cross-border consolidated data, Tier 1 capital can also be used. This FSI is an asset quality ratio and is intended to provide an indication of the exposure of deposit takers' financial derivative asset positions relative to capital.

Code	Indicator Name	Description
I17	Gross liability position in financial derivatives to capital	This FSI is calculated by using the market value of financial derivative liabilities as the numerator and capital as the denominator. Capital is measured as total capital and reserves as reported in the sectoral balance sheet; for cross-border consolidated data, Tier 1 capital can also be used. This FSI is an asset quality ratio and is intended to provide an indication of the exposure of deposit takers' financial derivative liability positions relative to capital.
I18	Trading income to total income	This FSI is calculated by using gains or losses on financial instruments as the numerator and gross income as the denominator. It is an indicator of earnings and profitability, which is intended to capture the share of deposit takers' income from financial market activities, including currency trading—that is, it measures the deposit takers' reliance on market-related activity to generate profits.
I19	Personnel expenses to noninterest expenses	This FSI is an indicator of earnings and profitability. It provides an indication of efficiency as a high or increasing ratio could undermine profitability.
I20	Spread between reference lending and deposit rates	This FSI is the difference (expressed in basis points) between the weighted average loan rate and the weighted average deposit rate, excluding rates on loans and deposits between deposit takers. It is an indicator of earnings and underlying profitability of the deposit-taking sector. It can also be used as a gauge of competitiveness within the sector.
I21	Spread between highest and lowest interbank rate	This FSI measures the spread between the highest and lowest interbank rates (SIRs) charged to deposit takers in the domestic interbank market. The Guide encourages weekly compilation of SIRs, using end-period rates for loans of the same maturity (overnight or weekly). This is a liquidity indicator. The dispersion in interbank rates is a very useful indicator of liquidity problems and bank distress. A high dispersion in interbank rates may signal that some institutions are perceived by their peers as vulnerable.
I22	Customer deposits to total (noninterbank) loans	This FSI is sometimes used to detect liquidity problems—a low ratio might indicate potential liquidity stress in the banking system and perhaps a loss of depositor and investor confidence in the long-term viability of the sector. It also provides an indication of the extent to which banks need to rely on wholesale funding to fund their loan book. This indicator is likely to attract more attention in the future given the number of banks that ran into problems because of their reliance on wholesale markets.
I23	Foreign-currency-denominated loans to total loans	This FSI is calculated by using the foreign currency and foreign-currency-linked part of gross loans to residents and nonresidents as the numerator and total gross loans as the denominator. It is an asset quality indicator, which measures the relative size of foreign currency loans within gross loans and therefore monitors exposures to both credit and currency risk.
I24	Foreign-currency-denominated liabilities to total liabilities	This FSI is calculated using foreign currency liabilities as the numerator and total debt plus financial derivative liabilities less financial derivative assets as the denominator. It is an indicator that measures the relative importance of foreign currency funding within total liabilities. A high reliance on foreign currency borrowing (particularly of short-term maturity) may signal that deposit takers are taking greater risks.
I25	Net open position in equities to capital	This FSI is calculated by using deposit takers' net open position in equities as the numerator and capital as the denominator. Capital should be total regulatory capital or Tier 1 capital. This FSI is an indicator of sensitivity to market risk, which is intended to identify deposit takers' equity risk exposure compared with capital.
Other Financial Corporations		
I26	Assets to total financial system assets	This FSI is calculated using OFCs' financial assets as the numerator and total financial system assets as the denominator. The latter is the total of financial assets owned by deposit takers, OFCs, nonfinancial corporations, households, the general government, and the central bank. This FSI measures the relative importance of OFCs within the domestic financial system.

Code	Indicator Name	Description
I27	Assets to GDP	This FSI is calculated using OFCs' financial assets as the numerator and gross domestic product as the denominator. It measures the importance of OFCs compared to the size of the economy.
Nonfinancial Corporations		
I28	Total debt to equity	This FSI is calculated by using debt as the numerator and capital and reserves as the denominator. It is a measure of corporate leverage—the extent to which activities are financed out of own funds.
I29	Return on equity	This FSI is calculated by using earnings before interest and tax as the numerator and the average value of capital and reserves over the same period as the denominator. It is a profitability ratio, which is commonly used to capture nonfinancial corporations' efficiency in using their capital.
I30	Earnings to interest and principal expenses	This FSI is calculated by using earnings (net income) before interest and tax plus interest receivable from other nonfinancial corporations as the numerator and debt service payments over the same period as the denominator. It measures nonfinancial corporations' capacity to cover their debt service payments (interest and principal). It serves as an indicator of the risk that a firm may not be able to make the required payments on its debts.
I31	Net foreign exchange exposure to equity	This FSI is calculated by using nonfinancial corporations' net foreign exchange exposure for on-balance-sheet items as the numerator and capital and reserves as the denominator. It measures nonfinancial corporations' exposure to foreign currency risk compared to their capital. The larger the exposure to foreign currency risk, the greater the stress on the financial soundness of nonfinancial corporations from a significant currency depreciation, and, as a consequence, on deposit takers.
I32	Number of applications for protection from creditors	This FSI is a simple numerical addition of the cases where bankruptcy proceedings are actually initiated during the period. It is a measure of bankruptcy trends, but it is influenced by the quality and nature of national bankruptcy and related legislation.
Households		
I33	Household debt to GDP	The data for household debt comprise debt incurred by resident households of the economy only. This FSI measures the overall level of household indebtedness (commonly related to consumer loans and mortgages) as a share of GDP.
I34	Household debt service and principal payments to income	This FSI is calculated by using household debt service payments as the numerator and gross disposable income over the same period as the denominator. It measures the capacity of households to cover their debt payments (interest and principal).
Market Liquidity		
I35	Average bid-ask spread in the securities market ³³	This FSI is calculated as the difference between the best (highest) bid and the best (lowest) ask price in the market, expressed as a percentage of the mid-point of the buy and sell price of an asset—a benchmark domestic government or central bank debt security in the first instance. Bid-ask spreads tend to be narrower in more liquid and efficient markets. This FSI is a measure of market tightness—the relative cost of engaging in a transaction irrespective of the absolute level of the market price of the items being sold.

³³ And in other markets that are most relevant to bank liquidity, such as foreign exchange markets.

Code	Indicator Name	Description
I36	Average daily turnover ratio in the securities market	This FSI is calculated as the number of securities bought and sold during a trading period divided by the average number of securities outstanding at the beginning and the end of the trading period. The Guide recommends that turnover be calculated in the first instance for a benchmark domestic government or central bank debt security. This FSI is a measure of market depth—the ability of a market to absorb large trade volumes without significant impact on market prices.
Real Estate Markets		
I37	Residential real estate prices	This FSI covers residential real estate price indices. Currently, there is limited international experience in constructing representative real estate price indices as real estate markets are heterogeneous, both within and across countries, and illiquid. A rapid increase in real estate prices, followed by a sharp economic downturn, can have a detrimental effect on financial sector soundness by affecting credit quality and the value of collateral.
I38	Commercial real estate prices	As with I37, there is currently limited international experience in constructing representative real estate price indices for the commercial sector.
I39	Residential real estate loans to total loans	This FSI is an asset quality ratio, which is intended to identify deposit takers' exposure to the residential real estate sector, with the focus on household borrowers. A high concentration of the loan portfolio in real estate signals the potential existence of an important vulnerability in the financial system.
I40	Commercial real estate loans to total loans	This FSI is calculated by using in the numerator loans collateralized by commercial real estate, loans to construction companies, and loans to companies active in the development of real estate; and gross loans as the denominator. It is an asset quality ratio, which measures banks' exposure to the commercial real estate market, and carries the same vulnerability risks as I 39 associated with a high ratio.

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