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## MODIFICATIONS TO THE CURRENT LIST OF FINANCIAL SOUNDNESS INDICATORS

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### EXECUTIVE SUMMARY

The Executive Board has requested that the list of financial soundness indicators (FSIs) be kept under review to ensure that they reflect the evolving priorities of Fund surveillance, the rapidly changing financial environment and the relative capacity of countries to compile FSIs.<sup>1</sup> Accordingly, the purpose of this paper is to inform Executive Directors on the outcomes of consultations conducted by the IMF's Statistics Department (STA) on revising the current list of FSIs in response to the global financial crisis and the adoption of a new regulatory framework under the Basel III Accord. In addition, the G-20 Data Gaps Initiative calls on the IMF to review the FSI list (Recommendation no. 2). STA has undertaken these consultations in close collaboration with a broad-based group of national and international experts, international standard setting bodies, IMF's relevant departments and all FSI-reporting countries and concerned international organizations.

As a result of these consultations, the list of FSIs has been revised. The revised FSI list includes new indicators to expand the coverage of the financial sector, including money market funds, insurance corporations, pension funds, other nonbank financial institutions, as well as non-financial corporations and households. Also, certain FSIs will be dropped due mainly to very limited reporting and comparability. Overall, 19 new FSIs will be added to the list and five will be dropped.

To improve usefulness and forward-looking features, FSIs for the sector as a whole would be enhanced with concentration and distribution measures. In this connection, STA is planning to conduct a pilot exercise with a set of FSI-reporting countries on a voluntary basis.

STA will continue to keep the Executive Board informed periodically on developments in the IMF's FSIs initiative, including its work on revising the *FSI Compilation Guide*.

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<sup>1</sup> See IMF, 2003a.

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## Glossary

CBCSDI	Cross-Border and Cross-Sector for all Domestically Incorporated
CCE	Coordinated Compilation Exercise
CET1	Common Equity Tier 1
DC	Domestic Consolidation
DGI	Data Gaps Initiative
DTs	Deposit takers
FSIs	Financial Soundness Indicators
FSICG	<i>Financial Soundness Indicators Compilation Guide</i>
FSIRG	Financial Soundness Indicators Reference Group
GDP	Gross Domestic Product
GFSR	Global Financial Stability Report
G-SIFI	Global Systemically Important Financial Institution
HHs	Households
ICs	Insurance Corporations
LCR	Liquidity Coverage Rate
MCM	Monetary and Capital Markets Department
MMFs	Money Market Funds
NFCs	Non-Financial Corporations
NPL	Non-Performing Loan
NSFR	Net Stable Funding Ratio
ODCs	Other Depository Corporations
OFCs	Other Financial Corporations
PFs	Pension Funds
ROA	Return on Assets
ROE	Return on Equity
RWA	Risk-weighted Assets
SDDS	Special Data Dissemination Standard
SRFs	Standardized Report Forms
STA	Statistics Department
TA	Technical Assistance

## INTRODUCTION

*This paper informs Executive Directors about the outcomes of consultations conducted by the IMF's Statistics Department (STA) on revising the current list of financial soundness indicators (FSIs) in response to the global financial crisis and the adoption of a new regulatory framework under the Basel III Accord. It builds on and extends the work on FSIs that the Executive Board has taken a close interest in since 2001.<sup>2</sup>*

- 1. The global financial crisis underscored the need to broaden the coverage of existing FSIs to better capture and monitor systemic risks especially affecting non-bank financial institutions.** In particular, the crisis highlighted the growing importance of the other financial corporations (OFCs) sector engaged in a wide range of financial activities outside the banking system. These activities include those known as “shadow banking,” which can be broadly defined as credit intermediation involving entities and activities outside the regulated banking system. As the OFC sector has become a critical element of the financial system, its potential impact on financial stability needs to be carefully analyzed and assessed, including through the regular collection of suitable new FSIs. The G-20 Data Gaps Initiative (DGI) also calls on the IMF to review the FSI list (Recommendation no. 2).
- 2. The adoption of the new Basel III regulatory framework represents a substantial reform of the current rules of the game for internationally active banks, affecting the definition and calculation of several existing FSIs for deposit-taking institutions.** The Basel III Accord, which is to be fully implemented in 2019, with a phase-in period starting in 2013, is aimed at addressing the problematic issues underscored by the global financial crisis through more stringent capital requirements, new global liquidity standards, improved risk management and governance, and greater transparency and disclosure. One of its main implications is that the current definitions of capital-based FSIs need to be revised to comply with the new regulatory framework.
- 3. Accordingly, STA has worked intensely on revising the current FSIs.** The work was conducted in close collaboration with a broad-based group of national and international experts, known as the FSI Reference Group (FSIRG),<sup>3</sup> international standards setting bodies and IMF departments, and in consultation with all FSI-reporting countries and concerned international organizations. Additionally, in order to improve the usefulness of FSIs in identifying and monitoring systemic risks, STA is planning to conduct a pilot exercise on the compilation of concentration and distribution measures with a set of FSI-reporting countries on a voluntary basis.
- 4. The IMF's FSIs initiative was launched in the early 2000s.** The IMF worked closely with national agencies and regional and international institutions to develop an initial set of core and

<sup>2</sup> IMF, 2001; IMF, 2003a; IMF, 2003b; IMF, 2005; IMF, 2007a; and IMF, 2007b.

<sup>3</sup> Appendix 1 of a companion Background Paper includes the list of FSIRG participants.

encouraged FSIs, which were endorsed by the Executive Board in June 2001.<sup>4</sup> Following this first important step, STA drafted the *Financial Soundness Indicators Compilation Guide (FSICG)*. The final draft of the *FSICG* was submitted to the Executive Board, which endorsed its posting on the Fund's external website in July 2004.<sup>5</sup> Then, in 2006, STA undertook a Coordinated Compilation Exercise (CCE)—a pilot exercise of FSI data compilation and reporting—and, in 2009, launched the IMF's FSI website (<http://fsi.imf.org>) to help Fund member countries report their FSIs on a regular basis to the IMF for public dissemination.

**5. Significant developments in the implementation of the IMF's FSIs initiative have occurred since staff last informed the Executive Board in November 2007:<sup>6</sup>**

- In July 2008, STA introduced amendments to the *FSICG* based on the CCE experience in order to enhance cross-country comparability of FSI data.
- In November 2009, the report "*The Financial Crisis and Information Gaps*"<sup>7</sup> endorsed by the G-20 Finance Ministers and Central Bank Governors called for the IMF to work on increasing the number of countries disseminating FSIs, expanding the country coverage to encompass all G-20 members, improving the FSI website further, including preferably quarterly reporting, and reviewing the FSI list (Recommendation no. 2).
- In order to strengthen Fund member countries' capabilities to produce, analyze and disseminate FSIs, STA has conducted a large number of training courses, seminars and workshops on FSIs.<sup>8</sup>
- Steady progress has been made in increasing FSI country coverage (Figure 1). As of July 31, 2013, 80 countries—spanning across the whole world—reported their FSIs (data and metadata) to STA on a regular basis for public dissemination on the IMF's FSI website.<sup>9 10</sup> All but one G-20 economies report their FSIs on a regular basis. Currently, 69 out of the 80 FSI-reporting countries submit their data and metadata on a monthly or quarterly basis.

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<sup>4</sup> IMF, 2001.

<sup>5</sup> Available at <http://www.imf.org/external/np/sta/fsi/eng/2005/061405.htm>

<sup>6</sup> IMF, 2007a.

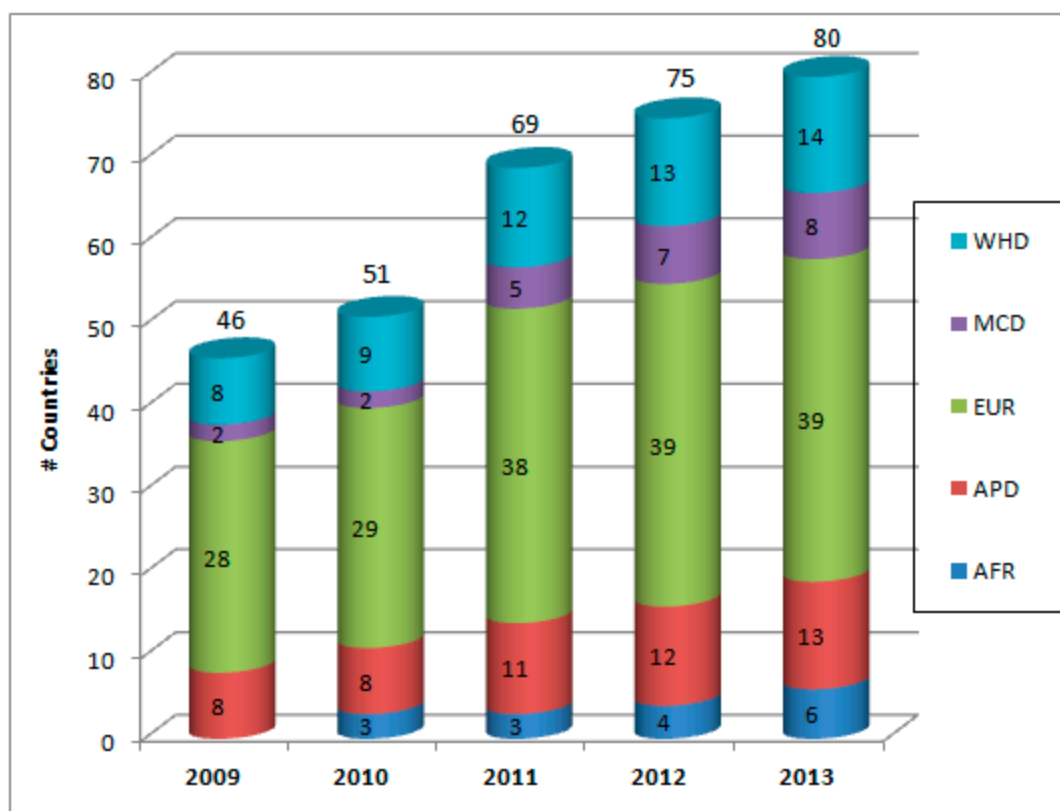
<sup>7</sup> Available at [www.imf.org/external/np/g20/pdf/102909.pdf](http://www.imf.org/external/np/g20/pdf/102909.pdf)

<sup>8</sup> Appendix 2 of the Background Paper includes a summary of the FSI seminars, courses, and workshops delivered during 2007-2013.

<sup>9</sup> Appendix 3 of the Background Paper includes the list of FSI-reporting countries and data coverage.

<sup>10</sup> Appendix 4 of the Background Paper provides details on the frequency of reporting by type of indicators.

Figure 1. FSIs Reporting Countries



Source : IMF's Statistics Department

- In April 2011, STA took over from the IMF's Monetary and Capital Markets Department (MCM) responsibility for preparing an FSI Statistical Appendix associated with the Global Financial Stability Report (GFSR). The FSI Statistical Appendix consists of six tables covering about 110 countries. These tables are published on a semi-annual basis on the IMF's external website at the time the GFSR is issued.
- Following recent enhancements to the Special Data Dissemination Standard (SDDS) and the establishment of the SDDS Plus, as approved by the Executive Board, the SDDS now *encourages* subscribers to disseminate seven FSIs on a quarterly frequency, while the SDDS Plus *requires* adherents to disseminate seven FSIs on a quarterly basis.<sup>11</sup>
- In November 2011, in recognition of the need to review the FSI list following the global financial crisis, the adoption of the new Basel III Accord and the G-20 DGI, STA convened a meeting of the FSIRG to revise the current core and encouraged FSIs.

<sup>11</sup> The implications of the changes introduced by the Basel III Accord for the definitions of FSIs included in the SDDS and SDDS Plus will be addressed in the Ninth Review of the Data Standards Initiative scheduled for early 2014.

**6. The paper is organized as follows:** The next section provides an overview of work on revising the current FSI list. The subsequent sections focus on: (i) changes to current FSIs and the introduction of new FSIs; (ii) other FSI-related issues; and (iii) tail risks, concentration, and distribution measures. The final section delineates the way forward. Appendices 1 and 2 summarize additions to and deletions from the current FSI list and present the revised FSI list, respectively.

## WORK ON REVISING THE FSI LIST

*This section briefly reports on revisions to the current list of FSIs, including key factors underpinning the identified FSI amendments, which STA has undertaken in close collaboration with the FSIRG and in consultation with all FSI-reporting countries.*

**7. In November 2011, as part of a broad consultation process with the international expert community, STA convened a meeting of the FSIRG that was attended by representatives from 32 countries and 10 international and regional organizations.** All IMF constituencies were invited to participate in the FSIRG, and all but one attended the meeting.<sup>12</sup> The meeting: (i) reviewed the current list of core and additional FSIs against the backdrop of the global financial crisis, the Basel III Accord and the G-20 DGI; and (ii) discussed and agreed on a work program and actions on FSIs as set out in the FSIRG's *Summary of Key Points and Conclusions*.<sup>13</sup>

**8. In the subsequent implementation of the internationally-agreed FSI work program and in close collaboration with the FSIRG, STA prepared three position notes<sup>14</sup> discussing the identified revisions to the current FSI list and other FSI-related issues.** Position Note no. 1 dealt with FSIs for deposit takers (DTs); Position Note no. 2 dealt with FSIs for OFCs; and Position Note no. 3 dealt with FSIs for nonfinancial corporations (NFCs), households (HHs), markets, and other related issues.

**9. The following main factors underpin the modifications to the current list of FSIs:<sup>15</sup>**

- changes in regulatory concepts arising from the introduction of the Basel III Accord;
- the need to maintain continuity of the existing set of core FSIs;
- enhancements to the SDDS and the establishment of the SDDS Plus approved by the Executive Board—six out of seven FSIs encouraged under the SDDS are required under the SDDS Plus;<sup>16</sup>

<sup>12</sup> See Appendix 1 of the Background Paper for the list of FSIRG members.

<sup>13</sup> The Summary of Key Points and Conclusions is available at <http://www.imf.org/external/data.htm>

<sup>14</sup> Position notes are documents that reflect the technical discussions and understandings between the FSIRG and STA regarding the modifications of the current list of FSIs.

<sup>15</sup> Appendices 5 and 6 of the Background Paper include the current FSI list and a summary of the changes to the current FSI list, respectively.

- the need to develop new FSIs for OFCs to recognize the heterogeneity of this sector and its increasing importance in the financial system;
- the need to strengthen the FSIs for NFCs and HHs to further enhance the monitoring of the soundness of the DT sector;
- the need to ensure that countries can provide data for the new and revised indicators without undue reporting burdens, focusing parsimoniously on the most analytically useful indicators; and
- the need to improve the usefulness of FSIs in identifying and monitoring systemic risks by producing and disseminating concentration and distribution measures to augment the FSIs for the sector as a whole.

**10. In addition to working on amendments to the FSI list, STA has been addressing FSI related issues that are important for enhancing comparability and homogeneity of FSIs across countries.** These include consolidation basis, frequency and timeliness of reporting, as well as the change in labeling from “encouraged” to “additional” FSIs to avoid confusion with SDDS terminology. Enhancing comparability and homogeneity of FSIs across countries has been and will continue to be a critical task for Staff going forward.

## REVISED FSI LIST

*This section describes the changes to the current list of FSIs. For each relevant sector, identified below, this section lists additions to, and deletions from, the current FSI list. A fuller discussion is provided in the Background Paper.*

### A. Core FSIs for DTs

**11. The identified revisions to the core FSIs for DTs will bring these indicators in line with relevant Basel III definitions.** When a country implements Basel III, it will be required to use Basel III regulatory definitions in calculating FSIs. This will apply to indicators of capital adequacy, solvency, as well as vulnerabilities arising from credit, market, and liquidity risks. In addition, the identified revisions will better standardize the definitions of the capital-based indicators to enhance cross-country comparability.

**12. Basel III has three main implications for existing capital-based FSIs:**

- Indicators that follow the Basel Committee on Banking Supervision capital adequacy definitions, measure the solvency of DTs, or assess their vulnerabilities arising from credit and market risks

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<sup>16</sup> While the SDDS encourages the dissemination of “Net open position in foreign exchange to capital,” the SDDS Plus instead requires “Residential real estate prices.”



must be calculated based on the Basel III definition of regulatory capital in countries that adopt Basel III.

- The broader total regulatory capital (Tier 1 and Tier 2) rather than the narrower Tier 1 measure must be used for all solvency indicators with the obvious exception of Tier 1 to risk-weighted assets (RWAs), and the regulatory leverage ratio. This is because national supervisors commonly use total regulatory capital as a capital measure for monitoring banks' exposures and solvency.<sup>17</sup>
- The FSI list should include as core indicators the new capital-based ratios that arise from the innovations of Basel III. These are the Common Equity Tier 1 (CET1) to risk-weighted assets (RWAs) and the Basel III leverage ratio. These ratios should become "active" in the FSI list when data start to become publicly available under the Basel III schedule. The new Basel III capital standard is in place from January 2013 onwards, and the new leverage ratio will be disclosed starting January 2015 and implemented in January 2018 after the final calibration of the ratio.

**13. As not all jurisdictions will introduce Basel III requirements across financial institutions at the same time, there is a need to address issues of the data aggregation of capital components for countries implementing Basel III and Basel II (and/or Basel I) simultaneously.**

In order to construct the capital-based FSIs, the recommended approach to derive the capital data at the sectoral level for countries where deposit-takers implement Basel III simultaneously with Basel I and/or Basel II is the summation of Basel I and/or Basel II capital components with the corresponding Basel III.<sup>18</sup> This issue will be addressed more fully in the revision of the *FSICG*.

**14. Four new indicators for DTs will be added into the core set and one will be upgraded from the additional set to the core set.** The three new FSIs linked to Basel III framework are: CET1 to RWAs, liquidity coverage ratio (LCR), and net stable funding ratio (NSFR). The indicator on provisions to NPLs will be added to the core set because it is included in the FSIs tables of the *GFSR*. The capital to assets indicator will be revised to "Regulatory Tier 1 capital to assets" and upgraded to the core set because it is encouraged in the SDDS and required in the SDDS Plus.<sup>19</sup>

## B. Core FSI for Real Estate Markets

**15. Indicator I37, Residential Real Estate Prices (percentage change in the last 12 months), will be moved from the additional set to the core set in light of the increasing importance of real estate markets for financial stability.** Monitoring residential real estate prices has become important for policy purposes, and this has been reflected in the inclusion of Residential Property

<sup>17</sup> The affected indicators are non-performing loans net of provisions to capital (I03), net open position in foreign exchange to capital (I12), large exposures to capital (I14), gross asset/liability position in financial derivatives to capital (I16/I17), and net open position in equities to capital (I25).

<sup>18</sup> See paragraphs 40-41 and Table 1 of the Background Paper for more details on the data aggregation of capital components for countries implementing Basel III and Basel II (Basel I) simultaneously.

<sup>19</sup> Currently, this indicator is included in the *GFSR* FSI tables prepared for about 110 countries.

Prices Index in the FSI category of the SDDS Plus. In order to promote cross country comparability, countries are requested to provide information on national practices in their metadata for FSIs.

### C. Additional FSIs for DTs

**16. A new additional FSI for DTs, *credit growth to the private sector*, will be added.**<sup>20</sup> This indicator contributes to capturing emerging systemic risks over time as excessive credit growth is viewed as an indicator of potential vulnerabilities in the financial sector and increased probability of a crisis event.

### D. Additional FSIs for OFCs

**17. The global financial crisis highlighted the growing importance of the OFC sector.** OFCs engage in a wide range of financial activities outside the banking system. With the growing importance of the sector, its potential impact on financial stability needs to be taken into account and carefully assessed. The need to better understand OFCs and their activities has been a recurrent theme raised by national authorities during recent G-20 bilateral consultations undertaken by staff in the context of the DGI.

**18. Owing to its heterogeneity, the OFC sector will be split into four subsectors**<sup>21</sup>: (i) money market funds (MMFs); (ii) insurance corporations (ICs); (iii) pension funds (PFs); and (iv) other OFCs. The latter covers all OFCs that are not included in the first three subsectors. The separation of ICs and PFs reflects differences in their business models and varying importance across countries. At this juncture, no further split of OFC subsectors seems to be practical because of limited data availability in many countries and likely serious data comparability issues. The FSIs for OFCs (sector as a whole) and subsectors will be included in the additional set of FSIs.

**19. Changes to the existing FSIs for OFCs can be summarized as follows:**

- ***I26 – OFC assets as percent of total financial system assets:*** This indicator will be produced for the OFC sector as a whole and for each defined subsector: (i) MMFs; (ii) ICs; (iii) PFs; and (iv) other OFCs.
- ***I27 – OFC assets as percent of GDP:*** This indicator will be produced for the OFC sector as a whole and for each defined subsector: (i) MMFs; (ii) ICs; (iii) PFs; and (iv) other OFCs.

<sup>20</sup> For details on the definition and coverage of credit growth to the private sector see Background Paper, paragraph 36.

<sup>21</sup> The split of OFC sector and the FSIs for each subsector of OFCs were discussed and agreed during the FSIRG meeting in November 2011.

## Additional FSIs for MMFs

### 20. The following new indicators for MMFs will be added as additional FSIs:

- **Sectoral distribution:** This asset quality indicator provides information on MMFs' assets distributed by debtor sector, such as central bank, DTs, OFCs, general government, NFCs, and nonresidents. It indicates the risk-profile of MMF investments by identifying different types of debtors, provides information on the exposure of these debtors to MMFs as a funding source, and captures a financial link between MMFs and DTs. Moreover, changes in the distribution would also capture MMFs' asset reallocations based on yields and/or risk perception.
- **Maturity distribution:** This indicator aims at assessing the level of liquidity by monitoring the asset maturity of the following time buckets: 1-30 days; 31-90 days; and more than 90 days.

## Additional FSIs for ICs<sup>22</sup>

### 21. The following new indicators for ICs will be added as additional FSIs:

- **Shareholders' equity to invested assets:** This capital indicator measures the level of capital that is available to meet actual or potential losses from ICs' investments.
- **Total premium income minus premium ceded by primary insurers to total premium income:** This risk retention ratio measures the risk that is passed on to reinsurance companies. Low and declining levels of this ratio may signal the presence of financial difficulties of primary insurers.
- **Return on equity (ROE) and Return on assets (ROA):** These earning and profitability indicators are leading indicators for solvency problems. The ROE measures ICs' efficiency in using their capital; the ROA measures ICs' efficiency in using their assets.

## Additional FSIs for PFs

### 22. The following new indicators for PFs will be added as additional FSIs:

- **Liquid assets to estimated pension payments in the next year:** This liquidity indicator assesses the adequacy of liquid assets to cover future pension payments.
- **ROA:** This earning and profitability indicator measures the efficiency of PFs in using their assets.

<sup>22</sup> Staff consulted with the International Association of Insurance Supervisors (IAIS) Secretariat when developing these indicators.

## E. Additional FSIs for NFCs

**23. The recent global financial crisis underscored the growing role of NFCs, HHs, and real estate markets, thus making FSIs for those sectors increasingly important for financial stability analysis and systemic risk monitoring.** NFCs, for example, are one of the major counterpart sectors of financial corporations. Therefore, monitoring the financial soundness of NFCs is valuable for detecting potential problems in the financial sector. Nonetheless, the reporting rate of FSIs for these sectors remains low in many countries due to difficulties in data collection.

**24. Changes to the existing FSIs for NFCs are as follows:** The total debt to equity ratio will include two supplementary ratios: *external debt to equity* and *foreign currency debt to equity*. The existing indicators *net foreign exchange exposure to equity* and *number of bankruptcy proceedings initiated* will be dropped due to very limited reporting and limited comparability, respectively.<sup>23</sup> Four new indicators will be added as additional FSIs, namely: (i) ROA, (ii) earnings to interest expenses, (iii) liquid assets to total assets, and (iv) NFC debt-to-GDP ratio. These changes are intended to provide more information to analysts on developments in the profitability, liquidity and debt positions (including servicing of debt) of NFCs. The methodology for compiling the new FSIs will be developed and included in the revised *FSICG*.

## F. Market Liquidity

**25. The existing market liquidity indicators I35 (Average bid-ask spread in the securities market) and I36 (Average daily turnover ratio in the securities market) will be dropped,** as these are readily available from commercial sources in most countries on high frequency. Most countries have been reporting only quarterly or less frequent data for both indicators to STA, which is well behind market developments. In addition, cross-country comparability of these indicators is limited due to different compilation methods, especially differences in the coverage of securities.

## G. Additional FSIs for HHs

**26. The household sector is another important counterpart sector of the financial sector.** As such, monitoring its financial health has become increasingly critical for macroprudential analysis and systemic risk monitoring. In this regard, a new indicator, *HHs debt to gross disposable income*, will be added as an additional FSI for HHs.

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<sup>23</sup> See Background Paper for a more detailed explanation.

## OTHER FSI-RELATED ISSUES

*This section provides an overview of work on other FSI-related issues that are important for enhancing comparability of FSIs across countries, such as consolidation basis, frequency and timeliness of reporting, and the change in labeling from “encouraged” FSIs to “additional” FSIs.*

### A. Consolidation Basis

**27. Experiences accrued to date and the discussions at the FSIRG underscore the need to improve the cross-country comparability of FSI data by limiting existing options on the type of consolidation basis.** Consolidation basis is an important FSI methodological dimension, which should be selected appropriately to ensure better comparability and homogeneity of FSIs across countries.

**28. Currently, for DTs the FSICG allows reporters to choose among six different consolidation bases, which will be streamlined.** The *Guide’s* two recommended consolidation bases, that is, cross-border and cross-sector for all domestically incorporated (CBCSDI) and domestically controlled cross-border and cross-sector, will be retained along with a third one, domestic consolidation (DC), as an option for countries with DTs that have very few or no foreign branches or subsidiaries, which would make DC broadly equivalent to CBCSDI. The focus in the *FSICG* and in staff technical assistance and training will be on these three main recommended consolidation bases in order to facilitate comparability of data. Nonetheless, the option of other consolidation bases will remain, not least because due to legal constraints some countries have no option but to report on an “other” consolidations basis.

**29. Consolidation for the FSIs of OFC subsectors, HHs, and NFCs is more straightforward.** The consolidation basis for compiling new FSIs for OFC subsectors should follow that used for compiling the current I26—“Assets to total financial system assets.” This could be either on a cross-border consolidation basis or a DC basis, depending on data availability and on whether branches and/or subsidiaries have significant activities abroad. For PFs, only DC is applicable, as they are unlikely to have branches and/or subsidiaries operating abroad. For HHs, only DC is applicable. For NFCs, either a cross-border consolidation basis or a DC basis could be used, depending on data availability and on whether NFCs have significant branches and/or subsidiaries’ activities abroad.<sup>24</sup>

<sup>24</sup> Recommendation No. 13 of the DGI is investigating conceptual and compilation issues regarding consolidation bases for financial and nonfinancial corporations.

## B. Frequency of Reporting and Breaks in Time Series

**30. More frequent and timely reporting would enhance the usefulness of FSIs for multilateral and bilateral surveillance and the monitoring of the performance of the financial sector.** Recommendation no. 2 of the G-20 Data Gaps Report of October 2009,<sup>25</sup> calls for more frequent and timely FSIs and encourages at least quarterly reporting. Considering current national FSI data compilation and reporting practices, as well as source data and other constraints, the guidelines for reporting FSI data to the IMF for dissemination on its FSI website and in other IMF publications are as follows:

- Compilation of *quarterly* data is encouraged for all countries and for all FSIs, in particular those on DTs, with a time lag of one quarter;
- For FSIs on NFCs, HHs, and possibly OFCs, quarterly frequency is also encouraged, but semi-annual and annual frequencies may be needed due to the availability of source data; and
- For semi-annual and annual data, the reporting is expected with a time lag of one to two quarters.

**31. Quarterly periodicity of FSIs has been gaining increasing importance, allowing policy makers to identify emerging issues in a timely manner.**<sup>26</sup> Monthly and quarterly periodicity contribute to more effective systemic risk monitoring and macroprudential analysis, making policy responses more timely and better tailored to specific circumstances. In the context of improving timeliness of reporting, countries that face problems in compiling final data on a timely basis are encouraged to report preliminary data based on a sample of the reporting population, which may be subject to later revision. The preliminary nature of such indicators should be clearly indicated in the metadata.

**32. Breaks in time series for supervisory-based indicators are unavoidable as a result of the implementation of Basel III.**<sup>27</sup> The FSIRG pointed to the need to manage time series breaks resulting from the introduction of the new Basel III concepts. Even if the label (Tier 1, Tier 2, total regulatory capital) of the variables used to calculate the capital-based indicators do not change, the instruments included in them, and the supervisory deductions they are subject to, will change, affecting the comparability of historical series. For non-supervisory-based indicators, countries will be encouraged to submit revised historical time series to facilitate analysis of systemic risk over time.

<sup>25</sup> <http://www.imf.org/external/ns/cs.aspx?id=290>

<sup>26</sup> For details, see Appendix 4 of the Background Paper.

<sup>27</sup> See Background Paper, paragraphs 42-43 for more details.

### C. Change of Labeling from “Encouraged FSIs” to “Additional FSIs”

**33. The change of labeling from “encouraged FSIs” to “additional FSIs” is made to better capture the nature of the revised list of FSIs and avoid confusion with the term “encouraged” used in the SDDS.** Accordingly, the revised list of FSIs shows two sets of FSIs (see Appendix 2): (i) “core FSIs;” and (ii) “additional FSIs.”

## DEVELOPING CONCENTRATION AND DISTRIBUTION MEASURES

*This section deals with planned work to augment FSIs for the sector as a whole with concentration and distribution measures to improve the usefulness of FSIs in identifying and monitoring systemic risks.*

**34. The global financial crisis revealed the need to develop indicators that could identify and monitor the build-up of systemic risks in a forward-looking manner.** FSIs for a sector as a whole act more as contemporaneous indicators and may hide variations within the population of financial institutions that may eventually put in danger the whole financial system. Market-based indicators tend also to be contemporaneous and/or may not fully reflect risks in the financial sector as they also capture general macroeconomic risks which are difficult to separate out.

**35. Therefore, it is important to augment FSIs for a sector as a whole with concentration and distribution measures.** Expanding FSIs for the financial system with concentration and distribution measures would allow policy makers and Fund staff to better capture performance of the financial sector with greater granularity and in a forward-looking manner.<sup>28</sup> Indeed, the FSIRG recognized the usefulness of these measures subject to some confidentiality constraints.

**36. Staff thus proposed to the FSIRG to augment the set of FSIs with the following concentration and distribution measures:** (i) *standard deviation*; (ii) *quintiles*; (iii) *deciles* (especially the left (or right depending on indicators) 10-percent tail of the distribution); (iv) *minimum* and *maximum values*, along with an indication whether the associated institutions have a share above five percent of the total assets of the banking (or OFC) sector; and (v) a *concentration index* (i.e., Herfindahl index).

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<sup>28</sup> While beyond the scope of FSIs, and thus beyond the scope of this paper, Fund staff work on developing frameworks for identifying and assessing tail risks is advancing. Staff has developed a new “simple heuristic” measure as an enhancement to standard stress testing (see IMF Working Paper “[A New Heuristic measure of Fragility and Tail Risks; Application to Stress Testing](#)”). This measure sheds light on the likelihood that a system would have non-linear responses to shocks in the tails. Non-linear responses in the tail of a distribution are more likely to lead to a systemic financial system shock or a systemic crisis.

**37. Despite potential challenges associated with more detailed distributional information and confidentiality concerns, the FSIRG agreed that these measures would significantly enhance the usefulness of FSIs.** Indeed, having time series on concentration and distributional characteristics of financial subsectors would greatly improve systemic risk monitoring in the time dimension. It would also allow policy makers and Fund staff to better identify potential build-up of systemic risks, thus providing additional inputs for macro-financial management.

**38. Therefore, STA is planning to conduct a pilot exercise for developing FSI concentration and distribution measures.** This pilot exercise will be conducted with a set of FSI-reporting countries on a voluntary basis. The main goal of the pilot will be to assess the feasibility of collecting and disseminating concentration and distribution measures for DTs and other selected FSIs, such as debt to equity for NFCs, for example. The outcome of the pilot and the possibility of regular reporting of these measures will be discussed with the FSIRG and FSI-reporting countries.

## THE WAY FORWARD

*This section delineates work that STA will undertake going forward.*

**39. Against the backdrop discussed in the previous sections, a number of initiatives are in the works or are being planned.** These can be summarized as follows:

- Post the revised FSI list on the IMF's external website together with this Board Paper and the companion Background Paper;
- Inform Fund member countries of the timeline for revising the *FSICG* and the FSI data and metadata reporting templates and their implementation; and
- Develop and implement an outreach program to promote the awareness of the revised list of FSIs and, in due course, the methodology for compiling them, as well as promote the use of the revised *FSICG* as a benchmark for compiling and reporting FSI data and metadata to the IMF for public dissemination on the IMF's FSI website.

**40. The *FSICG* will be revised to reflect the revised FSIs list.** STA will work in close collaboration with the FSIRG, international standard setting bodies and IMF's departments to update the FSI methodology to reflect Basel III and develop the methodology for compiling newly introduced FSIs. All FSI-reporting countries will be consulted and kept informed throughout the process.

**41. The IMF's FSI website will be updated.** In particular, the FSI data and metadata reporting templates will be revamped based on the revised list of FSIs and the revised *FSICG*.



**42. STA will conduct a pilot exercise on compiling concentration and distribution measures to better capture financial sector vulnerabilities and risks and improve the forward looking features of the FSIs.** In this regard, STA will: (i) invite all FSI reporting countries to participate on a voluntary basis; (ii) carry out the pilot exercise; and (iii) report back to the FSIRG.

**43. Capacity building efforts to strengthen countries' capabilities to produce, analyze and disseminate FSIs will continue.** In addition to updating the materials for training courses on FSIs in a timely fashion, STA will continue capacity building activities, such as training courses, workshops and seminars, as well as technical assistance missions, seeking donors funding to augment capacity building delivery as appropriate.

**44. STA will continue to keep the Executive Board informed periodically** on developments in the IMF's FSIs initiative, including its work on revising the *FSICG*.

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## Appendix I. Additions to and Deletions from the Current FSI List

Added FSIs	Deleted FSIs
<p><b><i>Core FSIs for Deposit takers</i></b></p> <ul style="list-style-type: none"> <li>• Common equity Tier 1 capital to risk-weighted assets [Solvency ratio]</li> <li>• Provisions to non-performing loans</li> <li>• Available amount of stable funding to required amount of stable funding [net Stable Funding Ratio]</li> </ul> <p><b><i>Additional FSIs for Deposit Takers</i></b></p> <ul style="list-style-type: none"> <li>• Credit growth to private sector</li> </ul> <p><b><i>Additional FSIs for Other Financial Corporations</i></b></p> <ul style="list-style-type: none"> <li>• OFC assets (percent of total financial system assets)</li> <li>• MMF assets (percent of total financial system assets)</li> <li>• IC assets (percent of total financial system assets)</li> <li>• PF assets (percent of total financial system assets)</li> <li>• Other OFC (percent of total financial system assets)</li> <li>• OFC assets (percent of GDP)</li> <li>• MMF assets percent of GDP</li> <li>• IC assets (percent of GDP)</li> <li>• PF assets (percent of GDP)</li> <li>• Other OFC (percent of GDP)</li> </ul> <p><b><i>Additional FSIs for Money Market Funds</i></b></p> <ul style="list-style-type: none"> <li>• Sectoral distribution of investments (percent of total investments) [Assets quality] <ul style="list-style-type: none"> <li>Central bank</li> <li>Deposit takers</li> <li>Other financial corporations</li> <li>General government</li> </ul> </li> </ul>	<p><b><i>Core FSIs for Deposit takers</i></b></p> <ul style="list-style-type: none"> <li>• Net open position in equities to capital</li> </ul> <p><b><i>Additional FSIs for Nonfinancial corporations</i></b></p> <ul style="list-style-type: none"> <li>• Net foreign exchange exposure to equity</li> <li>• Number of bankruptcy proceedings initiated</li> </ul> <p><b><i>Additional FSIs for Market Liquidity</i></b></p> <ul style="list-style-type: none"> <li>• Average bid-ask spread in the securities market</li> <li>• Average daily turnover ratio in the securities market</li> </ul>

<p>Nonfinancial corporations Non residents</p> <ul style="list-style-type: none"> <li>• Maturity distribution of investments (percent of total investments) [Liquidity] <ul style="list-style-type: none"> <li>1-30 days</li> <li>31-90 days</li> <li>&gt;90 days</li> </ul> </li> </ul> <p><b><i>Additional FSIs for Insurance Corporations</i></b></p> <ul style="list-style-type: none"> <li>• Shareholder equity to invested assets [Capital ICs]</li> <li>• Total premium income minus premium ceded by primary insurers to total premium income [Risk retention ratio ICs]</li> <li>• Return on assets [Earnings and profitability]</li> <li>• Return on equity [Earnings and profitability]</li> </ul> <p><b><i>Additional FSIs for Pension Funds</i></b></p> <ul style="list-style-type: none"> <li>• Liquid assets to estimated pension payments in the next year [liquidity ratio]</li> <li>• Return on assets [earnings and profitability]</li> </ul> <p><b><i>Additional FSIs for Nonfinancial corporations</i></b></p> <ul style="list-style-type: none"> <li>• Return on assets</li> <li>• Earnings to interest expenses</li> <li>• Liquid assets to total assets</li> <li>• NFC debt to GDP</li> </ul> <p><b><i>Additional FSIs for Households</i></b></p> <ul style="list-style-type: none"> <li>• Household debt to household disposable income</li> </ul>	
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## Appendix II. Revised FSI List

<b>CORE SET</b>	
<b>FSI code</b>	<b>Core FSIs for Deposit Takers</b>
<b>I01</b>	Regulatory capital to risk-weighted assets
<b>I02</b>	Regulatory Tier 1 capital to risk-weighted assets
<b>I03 (NEW)</b>	Common equity Tier 1 to risk-weighted assets [Solvency ratio]
<b>I04</b>	Capital to assets
<b>I05</b>	Non-performing loans net of provisions to capital
<b>I06</b>	Non-performing loans to total gross loans
<b>I07 (NEW)</b>	Provisions to non-performing loans
<b>I08</b>	Sectoral distribution of loans to total loans
<b>I09</b>	Return on assets
<b>I10</b>	Return on equity
<b>I11</b>	Interest margin to gross income
<b>I12</b>	Noninterest expenses to gross income
<b>I13</b>	Liquid assets to total assets
<b>I14</b>	Liquid assets to short-term liabilities <sup>29</sup>
<b>I15 (NEW)</b>	Available amount of stable funding to required amount of stable funding [Net stable funding ratio]
<b>I16</b>	Net open position in foreign exchange to capital
<b>Core FSIs for Real Estate Markets</b>	
<b>I17</b>	Residential real estate prices (Percentage change/last 12 months)
<b>ADDITIONAL SET</b>	
<b>Additional FSIs for Deposit Takers</b>	
<b>I18</b>	Large exposures to capital
<b>I19</b>	Geographical distribution of loans to total loans
<b>I20</b>	Gross asset position in financial derivatives to capital

<sup>29</sup> The LCR will replace this measure when Basel III is fully adopted.

MODIFICATIONS TO THE CURRENT FSI LIST

<b>I21</b>	Gross liability position in financial derivatives to capital
<b>I22</b>	Trading income to total income
<b>I23</b>	Personnel expenses to noninterest expenses
<b>I24</b>	Spread between reference lending and deposit rates (base points)
<b>I25</b>	Spread between highest and lowest interbank rates (base points)
<b>I26</b>	Customer deposits to total (non-interbank) loans
<b>I27</b>	Foreign-currency-denominated loans to total loans
<b>I28</b>	Foreign-currency-denominated liabilities to total liabilities
<b>I29 (NEW)</b>	Credit growth to private sector
<b>Additional FSIs for Other Financial Corporations (OFCs)</b>	
<b>I30 (NEW)</b>	OFC assets (percent of total financial system assets) <ul style="list-style-type: none"> <li>• MMF assets (percent of total financial system assets)</li> <li>• IC assets (percent of total financial system assets)</li> <li>• PF assets (percent of total financial system assets)</li> <li>• Other OFC assets (percent of total financial system assets)</li> </ul>
<b>I31 (NEW)</b>	OFC assets (percent of GDP) <ul style="list-style-type: none"> <li>• MMF assets (percent of GDP)</li> <li>• IC assets (percent of GDP)</li> <li>• PF assets (percent of GDP)</li> <li>• Other OFC assets (percent of GDP)</li> </ul>
<b>Additional FSIs for Money Market Funds (MMFs)</b>	
<b>I32 (NEW)</b>	Sectoral distribution of investments (percent of total investments) [Assets quality] Central bank Deposit takers Other financial corporations General government Nonfinancial corporations Non residents
<b>I33 (NEW)</b>	Maturity distribution of investments (percent of total investments) [Liquidity] 1-30 days 31-90 days >90 days

<b>Additional FSIs for Insurance Corporations (ICs)</b>	
<b>I34 (NEW)</b>	Shareholder equity to invested assets [Capital ICs]
<b>I35 (NEW)</b>	Total premium income minus premium ceded by primary insurers to total premium income [Risk retention ratio ICs]
<b>I36 (NEW)</b>	Return on assets [Earnings and profitability]
<b>I37 (NEW)</b>	Return on equity [Earnings and profitability]
<b>Additional FSIs for Pension Funds (PFs)</b>	
<b>I38 (NEW)</b>	Liquid assets to estimated pension payments in the next year [Liquidity ratio]
<b>I39 (NEW)</b>	Return on assets [Earnings and profitability]
<b>Additional FSIs for Non-financial Corporations (NFCs)</b>	
<b>I40</b>	Total debt to equity <ul style="list-style-type: none"> <li>• external debt to equity</li> <li>• foreign currency debt to equity</li> </ul>
<b>I41 (NEW)</b>	Return on assets
<b>I42</b>	Return on equity
<b>I43</b>	Earnings to interest and principal expenses
<b>I44 (NEW)</b>	Earnings to interest expenses
<b>I45 (NEW)</b>	Liquid assets to total assets
<b>I46 (NEW)</b>	NFC debt to GDP
<b>Additional FSIs for Households (HHs)</b>	
<b>I47</b>	Household debt to GDP
<b>I48</b>	Household debt service and principal payments to income
<b>I49 (NEW)</b>	Household debt to household disposable income
<b>Additional FSIs for Real Estate Markets</b>	
<b>I50</b>	Commercial real estate prices (Percentage change/last 12 months)
<b>I51</b>	Residential real estate loans to total gross loans
<b>I52</b>	Commercial real estate loans to total gross loans