Pilot Project on Concentration and Distribution Measures for a Selected Set of Financial Soundness Indicators

IMF Working Paper

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INTERNATIONAL MONETARY FUND

IMF Working Paper

Statistics Department

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Authorized for distribution by Robert York

February 2016

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Abstract

This paper reports the main findings of a pilot project launched in July 2014 by the IMF's Statistics Department to test augmenting the IMF's financial soundness indicators (FSIs) with concentration and distribution measures (CDMs) to capture tail risks, concentrations, variations in distributions, and the volatility of indicators over time that simple averages can miss. Volunteer participants reported a trial set of CDMs to assess analytical usefulness and identify concerns such as confidentiality and reporting burden. The results of the pilot suggests that CDMs can help detect financial sector risks, justifying the additional reporting burden but that further input from participating countries and potential data users should be sought; indeed further refinement of the reporting requirements and the CDMs themselves may be needed.

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I. INTRODUCTION

The recent global financial crisis emphasized the desirability of the IMF's financial soundness indicators (FSIs) to capture the build-up of systemic risks in a forward-looking manner. As currently computed, FSIs are rather contemporary sector average indicators that may hide variations within the population of financial institutions that may eventually put in danger an entire financial system.

In the context of the IMF/Financial Stability Board G-20 Data Gaps Initiative, the Fund has been called upon "to investigate, develop, and encourage implementation of standard measures that can provide information on tail risks, concentrations, variations in distributions, and the volatility of indicators over time."[1] In this context, discussions were raised about using CDMs to further elaborate on the current set of FSIs. It was envisaged that CDMs—calculated with due regard to confidentiality—could signal vulnerabilities in the financial system better than simple averages.

The IMF's Statistic Department (STA) undertook a pilot project to test the usefulness of augmenting the FSIs with a limited set of CDM data. The proposal was presented to a broad-based group of national and international experts through the Financial Soundness Indicators Reference Group (FSIRG) and other interested parties.[2]

The pilot project was launched in July 2014 with a group of 35 countries, participating on a voluntary basis. The primary objective of the project was to assess the feasibility of both calculating and reporting (regularly) CDM data for selected FSIs for the Deposit-Takers' (DTs') sector. In addition, the pilot was undertaken to ascertain (1) the effectiveness of the test set of CDMs in monitoring financial sector vulnerabilities; (2) the potential concerns over confidentiality of the data; (3) the extent of the reporting burden; and (4) the procedures and resources the Fund would need to deploy in order to gather, compile, analyze, and disseminate the CDMs along with current FSI data and metadata.

A report on the pilot project was submitted to the FSIRG for their consideration, including on next steps. The majority of respondents were supportive of the project and Fund staff

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1 See "The Financial Crisis and Information Gaps: Report to the G-20 Finance Ministers and Central Bank Governors", prepared by IMF Staff and the FSB Secretariat, October 29, 2009, recommendation #3.

2 The FSIRG composition is provided in Appendix I.

intends to actively seek further feedback on the analytical use and potential reporting burdens from the FSIRG, other countries, and users in the period ahead.

II. MODALITIES OF THE PILOT PROJECT

A. Indicators and Reporting Thresholds

Under the pilot project, CDMs were compiled for six FSIs of deposit takers [specifically, all deposit-taking institutions, except the central bank (Table 1)]. The CDMs included the following indicators: (1) minimum, maximum, and mean; (2) weighted standard deviations and skewnesses; and (3) quartiles and the asset share of the bottom quartile (Table 2). Also a concentration (Herfindahl) index was calculated.

Table 1. Pilot Project: Subset of Financial Soundness Indicators

Capital Adequacy
   Regulatory Tier 1 capital to risk-weighted assets

Asset Quality
   NPL to total gross loans

Profitability
   Return on assets (ROA)
   Return on equity (ROE)

Liquidity
   Liquid assets to short-term liabilities

Leverage
   Capital to total assets

Table 2. Pilot Project: Concentration and Distribution Measures		
Measure	Required Minimum Number of Financial Institutions	Required Frequency and Sample Set of Compilation
Mean (weighted by shares of assets in total assets)	Three	Monthly, quarterly, or annual
Median	Three	Monthly, quarterly, or annual
Minimum value	Three	Monthly, quarterly, or annual
Maximum value	Three	Monthly, quarterly, or annual
Standard deviation (weighted by shares of assets in total assets)	Five	Monthly, quarterly, or annual
Skewness (weighted by shares of assets in total assets)	Five	Monthly, quarterly, or annual
Average values by quartile	Twelve	Monthly, quarterly, or annual
Herfindahl index	Five	Annual

To facilitate and ensure uniform and consistent reporting of data from pilot countries, STA developed a standard template in Microsoft Excel and an accompanying *Guidance Note*. The data template included worksheets with detailed instructions for input and output, calculation of the CDMs, and for metadata. Pilot participants were asked to report historical CDMs covering at least the period 2010–13 but were encouraged to report 2007–13, if possible; as well they were asked to use the same reporting frequency and set of DTs as for their regular FSI reporting. The *Guidance Note* explained the calculation of each CDM and its usefulness. The data reporting template and *Guidance Note* were circulated to participating countries in August 2014.

To preserve the confidentiality of individual institutions, participating countries were asked not to report the underlying data for individual institutions. The underlying data were not needed to address the main objectives of the pilot project, and although any underlying data reported to the IMF would be treated with complete confidentiality, asking for this data might have discouraged some countries from participating.

Requiring a minimum number of institutions to calculate the CDMs was also included to preserve confidentiality of the data. It was felt that establishing minimum thresholds would prevent the identification of values for individual DTs. However, higher thresholds could also be considered for data that could be publicly disseminated.

B. Definitions of CDMs

Concentration

The **Herfindahl Index**, was used as the reporting measure of concentration. The **Herfindahl Index**, *H*, is the sum of the squares of the *asset shares* (measured in percent) of all firms in a sector:

$$H = \sum_{i=1}^{N} (a_i)^2$$

where,

$$a_i = \frac{(\text{Total assets of institution i})}{(\text{Total assets of the entire banking sector})}$$

Values of the index range from 0 to 1.00. Higher values of this index indicate greater concentration. If there were only one bank in a financial sector (perfect concentration), *H*

would be 1.00.[3] If there were 100 equal sized firms with a perfectly even distribution of assets, the value of the index would be 0.01.[4] A rule of thumb sometimes used is that values of *H* below 0.10 indicate relatively limited concentration, while values above 0.18 indicate significant concentration.

Measures of Dispersion

The Pilot project required reporting of measures of (1) *central tendency* (mean and median); (2) *variability* (minimum, maximum, and standard deviation); and (3) *skewness*.

- The **mean** is the *weighted* arithmetic average of FSI values. The mean of each FSI is calculated as follows:

$$\overline{FSI} = \sum_{i=1}^{N} \left(FSI_i \times a_i \right)$$

where

FSI_i = the value of the FSI for institution i; and

N = the number of institutions in the DT sector;

- The **median** is the middle value of an FSI. It is calculated first by ranking institutions according to the FSI, from lowest to highest. Then the *median* value of the FSI is the value for the institution at the exact middle of this distribution (if there are an odd number of institutions) or just above the middle (if there is an even number of institutions) is chosen. Note that, unlike means, median values are not weighted by assets.

- The **minimum and maximum values** are simply the smallest and largest value of each FSI for any DT in the sector.

- The **Standard deviation (σ)** is the square root of the *weighted* variance **(σ^2)**. The weighted variance is calculated as follows:

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[3] $H = (1.00)^2 = 1.00$.

[4] $H = (0.01^2 + (0.01)^2 + \dots + (0.01)^2$ x [100 times] = 0.01

$$\sigma^2 = \sum_{i=1}^{N}\left[\left(FSI_i - \overline{FSI}\right)^2 \times a_i\right]$$

The standard deviation is then the square root of this figure.

- The **skewness (μ^3)** is calculated as follows:

$$\mu^3 = \frac{\sum_{i=1}^{N}\left[\left(FSI_i - \overline{FSI}\right)^3 \times a_i\right]}{\sigma^3}$$

Skewness is based on the third moment of a distribution. It indicates the extent to which data are asymmetrically distributed around the mean. Positive skewness indicates a longer right-hand side tail of a distribution and negative skewness indicates a longer left-hand side tail.[5]

- The **quartiles and asset shares** are the values of the FSIs for each of the four quartiles of the DT sector. The quartiles are determined separately for each FSI, first by sorting institutions by the FSI from top to bottom,[6] then by dividing them into four equal sized groups.[7] The asset share is calculated for the bottom quartile only; the assets of the institutions in that quartile are divided by total DT sector.

III. RESULTS OF THE PILOT PROJECT

Participation in the project was broadly based and there was a strong response to the request for volunteers. IMF Staff contacted the 95 authorities that were reporting FSIs at the time, of which 49 agreed to participate although data from only 35 was actually received. In the event, several countries reported that due to their capacity constraints they could not participate.

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[5] Movements in stock prices, for example, have negative skewness.

[6] For NPLs to total gross loans, "top" means the lowest value, and for the other five FSIs it means the highest value.

[7] If the number of institutions is not evenly dividable by four the top quartiles should be allocated more institutions. For example, if there are 17 institutions the top quartile should have 5 institutions and the others should have 4 institutions. If there are 19 institutions the top 3 quartiles should have 5 institutions and the bottom quartile should have 4 institutions.

Participation in the project spanned all regions of the world (Figure 1). Europe was more highly represented than other regions, with a mixture of both advanced and emerging countries that responded. There was also good variation across income groups, except for low-income countries, which were not as well represented possibly due to capacity constraints.

Figure 1. Participation in the Pilot Project
Geographic coverage
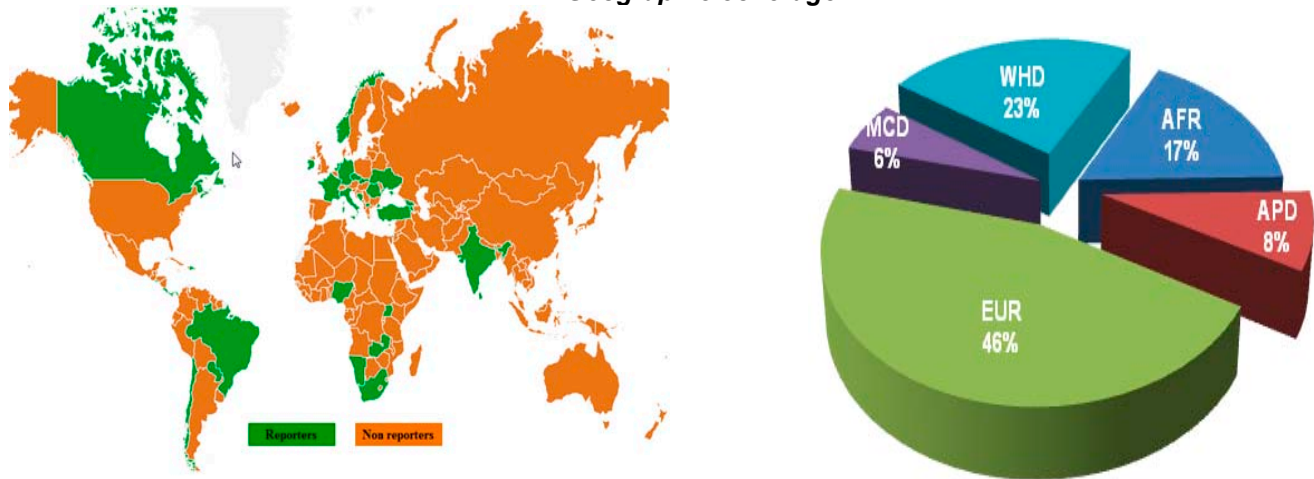
Participation by income level
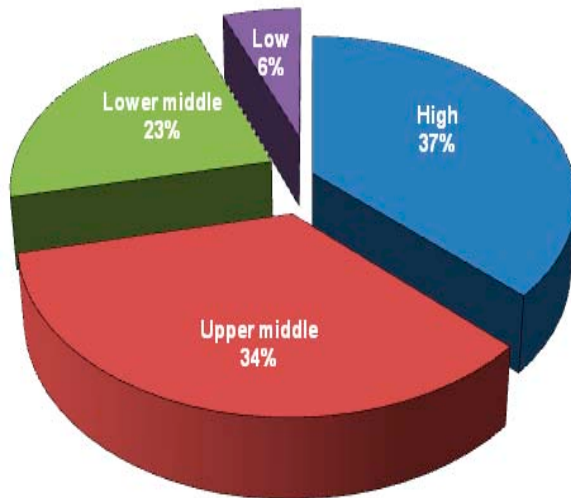
List of participating countries

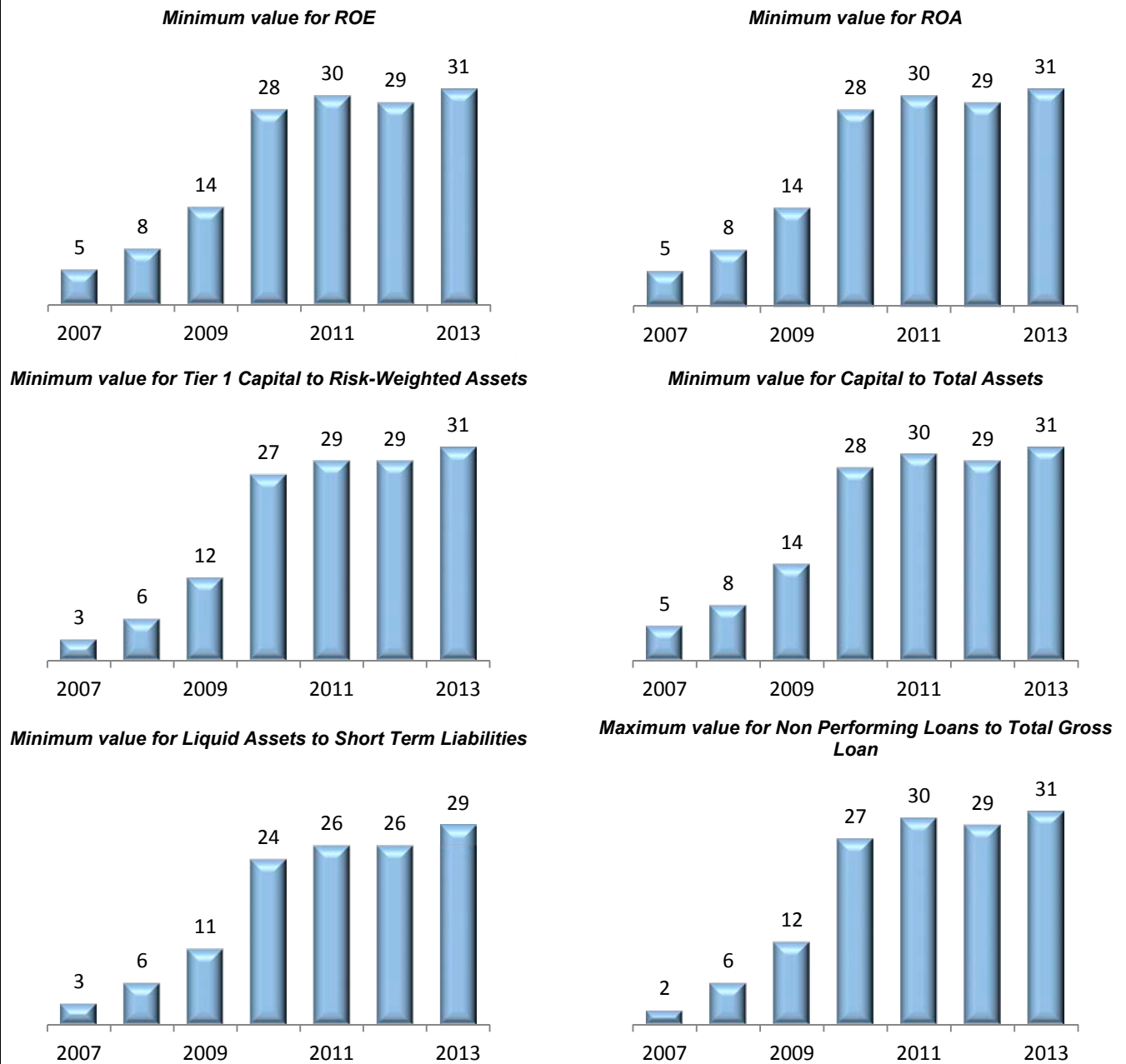|			
1	Armenia, Republic of	19	Macedonia, FYR
2	Bosnia and Herzegovina	20	Malta
3	Brazil	21	Mauritius
4	Canada	22	Namibia
5	Chile	23	Netherlands
6	China, P.R.: Macao	24	Nigeria
7	Costa Rica	25	Norway
8	Cyprus	26	Panama
9	Czech Republic	27	Paraguay
10	Dominican Republic	28	Romania
11	El Salvador	29	Slovak Republic
12	France	30	South Africa
13	Georgia	31	Sri Lanka
14	Germany	32	Turkey
15	India	33	Uganda
16	Ireland	34	Ukraine
17	Israel	35	Zambia
18	Italy		

Source: CDM dataset and IMF staff calculations.

AFR = African Department (Sub-Sahara African countries); APD = Asia and Pacific Department; EUR = European Department; MCD = Middle East and Central Asia Department; WHD = Western Hemisphere Department

The comprehensiveness of reporting varied across countries, indicators, and time periods. Reporting was most complete for 2013, with less data for earlier years especially before 2010. Reporting of the profitability CDMs was the most comprehensive, while capital to asset ratio (CAR) and liquidity reporting were weakest (Figure 2).

Figure 2. Number of Participating Countries for Selected CDMs

Minimum value for ROE

Minimum value for ROA

Minimum value for Tier 1 Capital to Risk-Weighted Assets

Minimum value for Capital to Total Assets

Minimum value for Liquid Assets to Short Term Liabilities

Maximum value for Non Performing Loans to Total Gross Loan

Source: CDM dataset and IMF staff calculations.

Few confidentiality concerns were expressed by participants, perhaps reflecting the influence of "self selection" under the pilot. Indeed, those countries with such concerns were probably less likely to participate. Many participants freely provided their bank-by-bank input data, even though the template clearly indicated that such data was not being requested under the pilot project. Not all participants were comfortable with all series being

divulged publicly. In this regard, one participant proposed increasing the minimum number of institutions required to report some indicators to preserve confidentiality of institutional data.

Participants were invited to provide notes and comments describing any reporting difficulties or issues that they encountered. Prior to submitting results, several participants engaged IMF staff to resolve some methodological issues such as the computation of quartiles. In the metadata worksheet, IMF staff noted that the majority of notes/comments related to country-specific adjustments that were made or could have been made, to accommodate missing values (most often relating to short-term liabilities) or difficulties in providing historical values. Some comments also concerned the template itself, and called for elaboration about the detailed CDM calculations.

The following data compilation issues arose:

- Several countries entered small amounts when institutions reported zeros so that the template would not return a blank for the CDM for the related indicator. This adjustment was most commonly made for liquid liabilities. In this case, rules could be adopted so that a small number of missing or misleading values from one or two institutions do not cause an entire CDM to be reported as a blank or to have a misleading value, causing other information that has an important bearing on tail risks to be lost.[8]

- Submissions of different periodicities had to be annualized for all countries for comparison purposes.

- Some countries submitted multiple output sheets for a single time period in order to capture variables that were reported by all but a small number of institutions. These multiple output sheets had to be combined into one, raising the resource costs of compilation.

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[8] An example of misleading values could include a return on equity ratio of thousands of percent for a bank that has little profits but almost no capital, or a positive ratio for a bank that that has negative profits and negative capital.

- Output sheets required close validation for methodological errors, such as combining multiple periods in one output sheet.

Some of these issues could be solved by automating data submissions, but some reveal conceptual issues with the data.

The compilation of submissions by IMF staff required considerable resources but could be streamlined. The submissions were received in Excel files and had to be transferred into Economic Outlook Suite (EcOS) software, a labor intensive process that could be automated if regular CDM reporting moves forward. Once in EcOS, data can be manipulated and analyzed for various purposes. Notes and comments were compiled separately in Excel files, a process that could also be automated with regular CDM reporting.

Once the pilot project was completed, a report was sent to the FSIRG and pilot participants to seek their further feedback. Out of thirteen countries that provided feedback, twelve were broadly supportive of the project, and one country that is not an FSI reporter, indicated that it would not be able to participate in the compilation and dissemination of CDMs. A summary of the pilot participants' feedback is as follows:

- None of the twelve countries with a broad supportive view reported any potential burden resource associated with the compilation of CDMs.

- A couple of countries questioned the rationale behind the inclusion of the maximum and minimum values of FSIs in the CDM dataset, which they consider as being outliers. These countries suggested that percentiles be used for FSIs distributions instead of the minimum and maximum values.

- Three countries raised confidentiality issues. One of these countries indicated using internal data suppression techniques beyond the thresholds suggested in the CDM report to preserve confidentiality. Another country saw advantages of disseminating data on groups of countries (regional, according to level of development, etc.) rather than on an individual basis.

- A couple of countries commented on the CDM templates, suggesting that these templates be improved to address the issue of error messages arising when there is no data for a reporting entity for a specific CDM indicator.

IV. CHARACTERISTICS OF THE SUBMITTED DATA

The pilot project suggests that CDM data have analytical value that would justify efforts to compile and report them. The data provide important information that is not revealed by averages, can be used as a starting point in financial stability and performance assessments, and are a useful tool for monitoring financial sector vulnerabilities. For instance, distributions of minimum values of CDMs which represent the institutions with the most severe risks for any variable[9] show substantial variation across countries and over time within countries. These minimum values are consistently significantly lower than the averages with notable outliers in several instances. Figure 3 exhibits such distributions for the minimum values of the Tier 1 Capital to Risk Weighted Assets (RWA) and the maximum values of the ratio of NPLs to Total Gross Loans, using the World Bank's income level classification. If one accepts that the average value of these indicators has analytical value and since individual institutions' FSIs are central to stress testing analyses and to financial sector assessments, it would seem quite probable that the additional information contained in CDMs has important analytical value.

CDMs lend themselves to a number of analytical applications. One example is in Figure 3, which shows the evolution of the minimum values of Tier 1 Capital to RWA. Figures 3 and 4 are generated only for groups of countries in order to preserve confidentiality, however, the same analyses can be used to compare individual countries with regional peers or income-level peers. Average indicators and variation in standard deviations for Tier I Capital to RWA for different country groups show the evolution of the distribution over time (Figure 5).

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[9] Or maximum values in the case of NPLs, but henceforth "minimum values" will refer to the most distressed values (i.e., the maximum for NPLs and the minimum for everything else).

Figure 3. Distribution of the Minimum Values of Tier 1 Capital to Risk-Weighted Assets
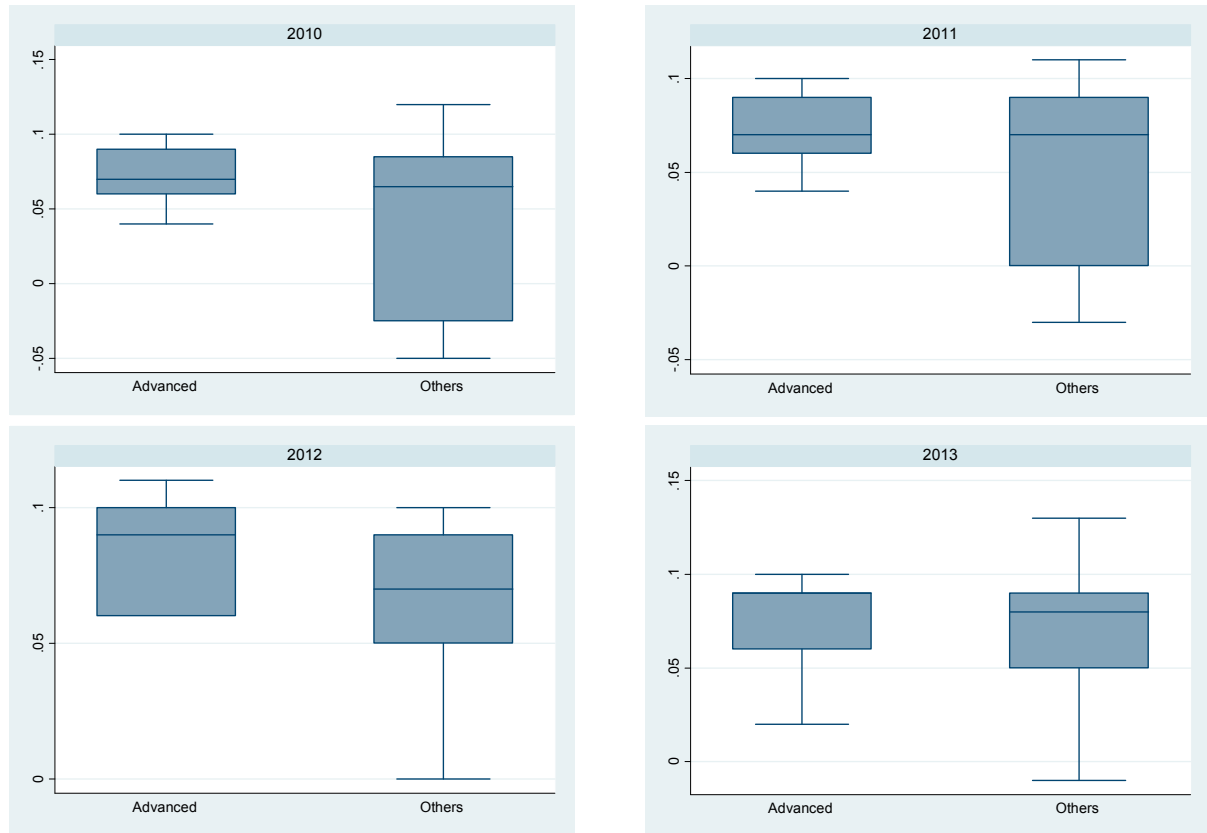
Source: CDM dataset and IMF Staff calculations.

The top and bottom of the shaded boxes represent the 3rd and 1st quartiles, respectively. The horizontal lines beyond the shaded boxes represent minimum and maximum values. However, certain extreme values are classified as outliers and are excluded from the data and not shown in the figure.

Note that the scale of the vertical axes varies.

"Others" includes low income and emerging market countries.

Figure 4. Distributions of the Maximum Values of NPLs to Total Gross Loans [1/ 2/]
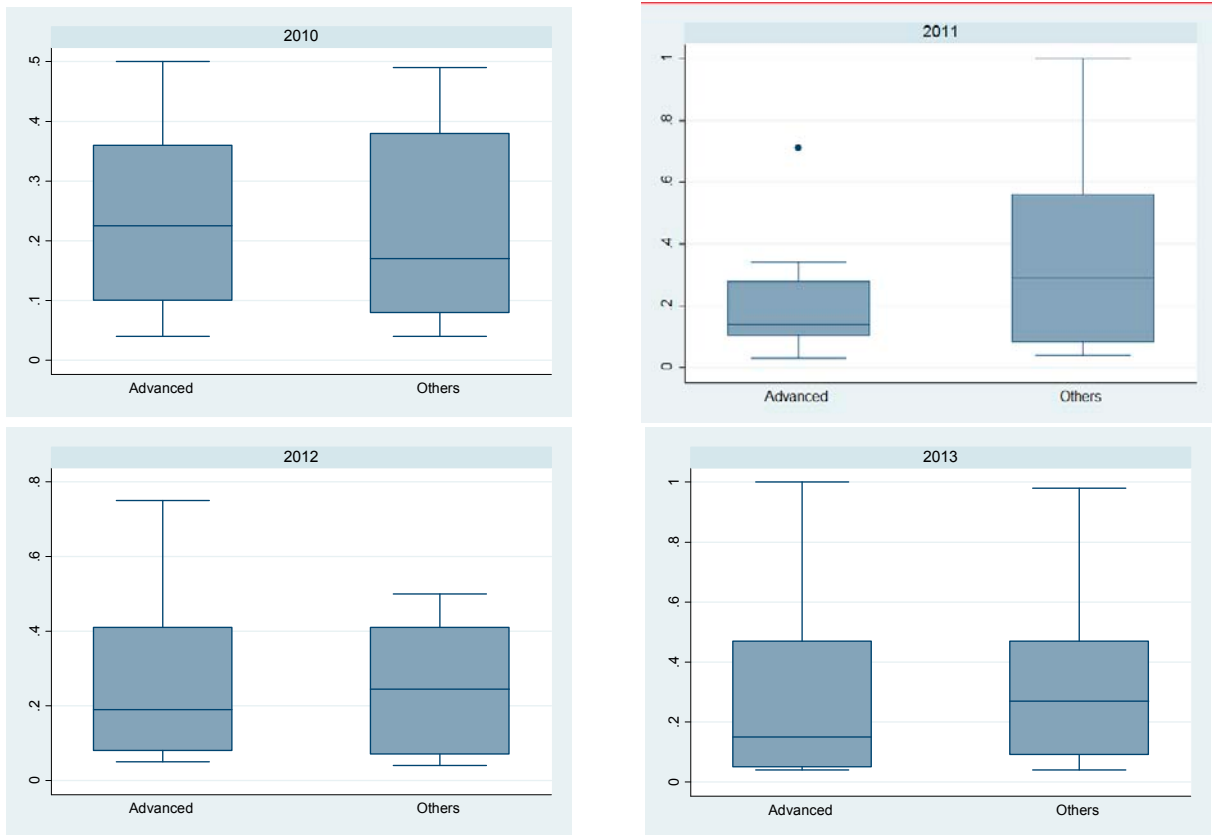
Source: CDM dataset and IMF staff calculations.

1/ The values in the figures below represent values of particular banks in each country.
2/ The shaded box narrows in 2011 because the largest value within the distribution went up from 0.5 in 2010 to 0.71 in 2011, while other values of the distribution did not change significantly. The 0.71 value is treated as an outlier in 2011, so excluded from the data, as it falls outside the 75th percentile by more than 1.5 times of interquartile range.

The top and bottom of the shaded boxes represent the 3rd and 1st quartiles, respectively. The horizontal lines beyond the shaded boxes represent minimum and maximum values. However, certain extreme values are classified as outliers and are excluded from the data and not shown in the figure.

Note that the scale of the vertical axes varies.

"Others" includes low income and emerging market countries.

Figure 5. Distribution of Minimum Values of Tier 1 Capital to RWA by Country
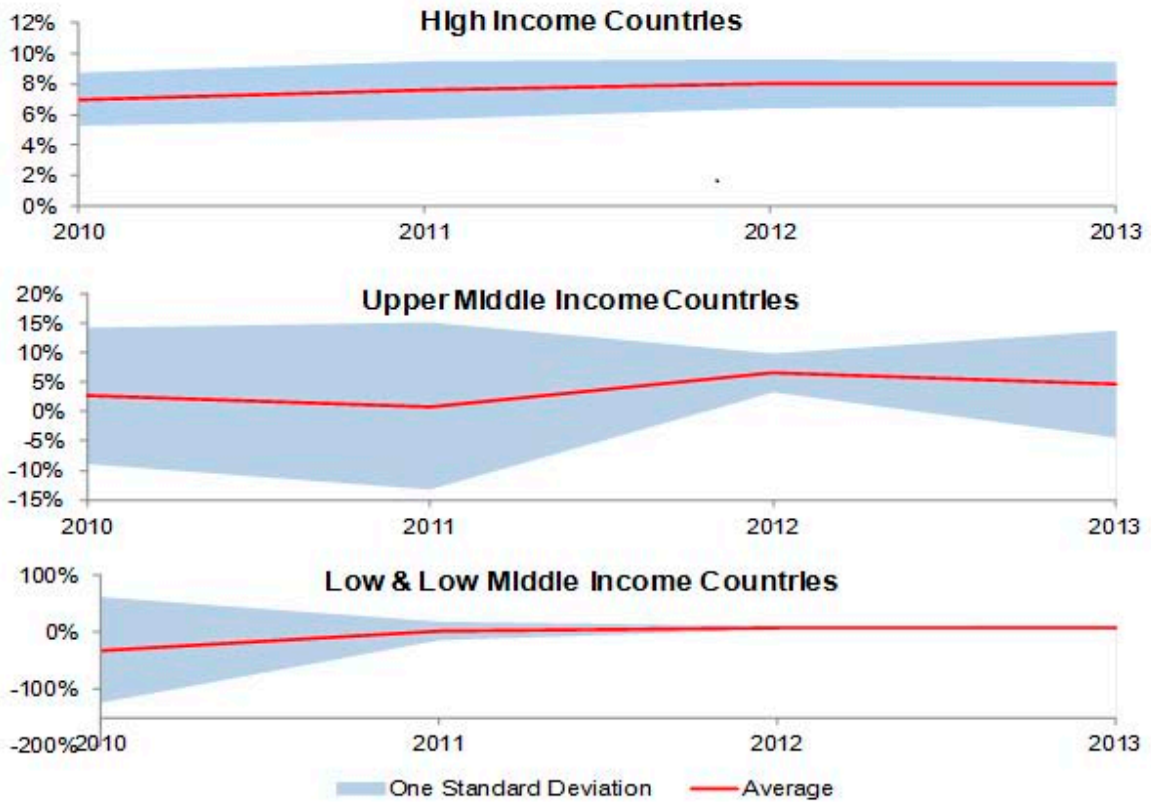
Source: CDM Dataset and IMF Staff Calculations.

V. POSSIBLE REFINEMENTS TO THE CDM REPORTING

A. Additional CDMs

The pilot project collected a reduced set of CDMs in order to simplify reporting. It is hoped that CDMs, if implemented, could be calculated for a larger set of indicators to increase the analytical value of the reporting while still imposing a reasonable reporting burden. A revised *FSI Compilation Guide* (forthcoming) proposes a number of additional measures that can help uncover financial sector vulnerabilities (Table 3).

Table 3. List of New FSIs

Description	Possible CDM
Core FSIs for Deposit Takers	
Solvency indicator (CET1 to RWA)	Yes
Net stable funding ratio	
Provisions to NPLs	Yes
Additional FSIs for Deposit Takers	
Credit growth to private sector	
Additional FSIs for Other Financial Corporations	
Capital adequacy ICs	Yes
Reinsurance issues ICs	
Earnings and profitability ICs	
Return on assets Return on equity	
Liquidity ratio PFs	
Earnings and profitability PFs	Yes
Sectoral distribution of investments for MMFs	
Maturity distribution of investments for MMFs	
Additional FSIs for Nonfinancial Corporations	
Return on assets	
Earnings to interest expenses	
Liquidity indicators	
Current ratio Liquidity ratio	
NFC debt to GDP	
Additional FSIs for HHs	
Household debt to household disposable income	

In addition to expanding the set of indicators for which CDMs are calculated, adjustments could be made to the set of CDMs for each indicator. For example, countries with large numbers of institutions could report decile averages to provide important additional information about tail risks without compromising the confidentiality of individual institutions. Meanwhile, they and all other countries that satisfy the minimum number of institutions should continue to report quartile averages so that there is a basis for world-wide comparison (thus, countries with large numbers of institutions would report both decile averages and quartile averages).

Reporting of the ratio of liquid assets to short-term liabilities could be augmented. The difference between liquid assets and short-term liabilities is also important as it indicates the size of the potential funding shortfall relative to the size of the balance sheet of institutions.[10] Consideration could therefore be given to reporting the gap of short-term liabilities minus liquid assets, divided by capital or by total assets, in addition to reporting liquid assets divided by short-term liabilities. The gap between liquid assets and short-term liabilities can be calculated from underlying series that are already included in the template. Negative gaps should be reported as well as positive gaps as they can provide useful information about banks' business models. The ratio still provides useful information about the share of existing financing that would need to be rolled over, so both the gap and the ratio should be reported.

Furthermore, there should be limits on the value of the ratio. Missing values should be thrown out, and consideration could be given to capping the value of this ratio at 100 percent (or some slightly higher level to take plausible reductions of liquid asset values into account). This indicator aims to measure rollover risk, but once a ratio comfortably above 100 percent is reached there is no rollover risk and thus no value in reporting higher ratios.[11]

Kurtosis will not be added. Kurtosis was proposed as an indicator and is noted as a descriptive statistic in the *FSI Compilation Guide*. However its analytical value is not considered to be sufficient to merit the additional loss of degrees of freedom in the data reporting. Kurtosis provides information about both the good end and the bad end of the distribution. It was thought that information about the bad end of the distribution (minimum and bottom quartile, quintile, or decile) was more important than aggregated information about the fatness of both ends.

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[10] An institution with ten dollars of short-term liabilities and only one dollar of liquid assets is more financially sound than a similar-sized institution with a million dollars of short-term liabilities and a half million dollars of liquid assets, even though its liquid assets to short-term liabilities ratio is much worse.

[11] Several countries reported that some of their institutions had little or no short-term liabilities, causing this ratio—as currently calculated—to return an error or an enormous ratio that appeared dramatic yet represented nothing of consequence. This is an issue that rarely emerges for a banking sector as a whole and hence would not have been raised in the context of the regular reporting of FSIs.

B. Minimum Number of Institutions

The required minimum numbers of reporting institutions (reporting threshold) should be increased for at least some CDMs (Figure 6). For example, the reporting threshold for the maximum, minimum, mean and median is only three institutions even though these four CDMs together would be sufficient to determine exact values for four individual institutions. Some reporting thresholds should be increased at least to the point where values of individual institutions cannot be derived.[12]

Reporting thresholds may need to include buffers, particularly for publicly reported data. The minimum number of reporting institutions has to be at least large enough that exact values cannot be calculated for each individual institution, but this condition may be insufficient to alleviate confidentiality concerns. Consideration should, therefore, be given to introducing reporting thresholds in excess of what is needed to precisely calculate data for individual institutions, and to introducing a second set of stricter reporting thresholds for data to be reported publicly. Furthermore, some FSIs may be considered to be more sensitive than others. More sensitive FSIs could have stricter reporting thresholds.

Reporting of CDMs should be prioritized so that the more important CDMs have lower reporting thresholds. For each additional CDM that is reported, there is an increase in the number of reporting institutions that is required in order to ensure that data for individual institutions cannot be derived. Thus, in countries with few institutions, where only a limited number of CDMs can be reported without compromising confidentiality, the CDMs that are reported could be limited to high priority indicators. In comparison, for countries with many institutions, the reporting thresholds for all CDMs will be met and all CDMs can be reported without compromising data confidentiality.

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[12] Data on the number of institutions covered in regular FSI reporting show that a number of countries have less than twenty institutions.

Figure 6. Distribution of the Number of DTs Sector in Participating Countries
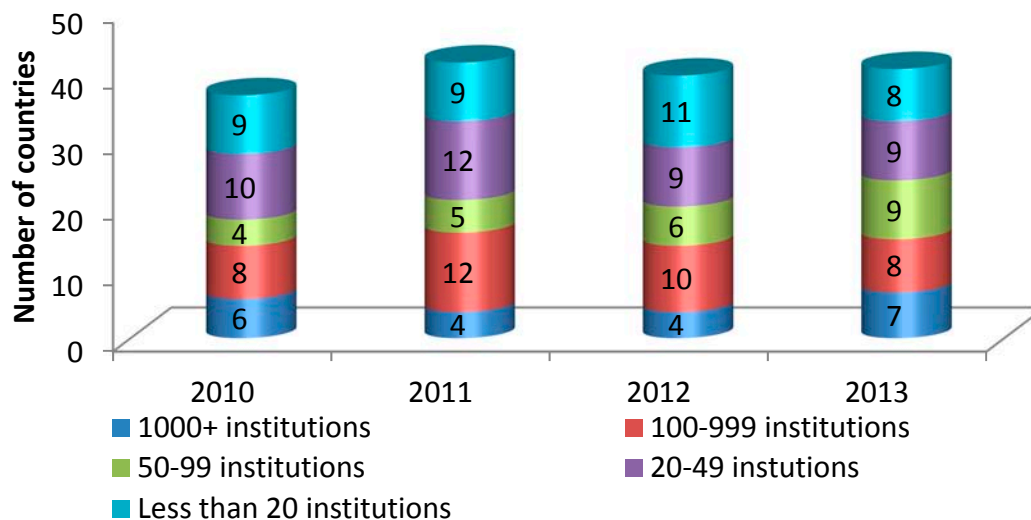
Source: IMF's FSI database

The CDM with the lowest reporting threshold should be the minimum value.[13] This is the most important CDM for assessing tail risks, and if a country has so few institutions that it can only report one CDM this is the one it should report. The current threshold of three institutions might be sufficient for data reported to the IMF, but a higher number might be appropriate if these data were to be reported publicly.

The maximum value should have the highest reporting threshold. A high maximum value can sometimes signal that there are institutions that are not using their resources efficiently, but it normally has little bearing on tail risks. Thus, this CDM should have the lowest priority; to be reported only if there are enough institutions to report all CDMs.

The reporting threshold for the bottom quartile or decile averages should be lower than for the other quartile or decile averages. Currently, all quartiles have equal reporting thresholds, but the bottom quartile is more useful in identifying tail risks. Not only the bottom quartile, but also its share of total assets, should be reported before other quartiles are reported.

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[13] For NPLs it should be the maximum that has the lowest threshold. Either the revised reporting system could apply the thresholds differently for NPLs, or "minimum" and "maximum" could be replaced with "worst" and "best". This concern related to NPLs would apply to all references to "minimum", "maximum", "bottom", or "top".

VI. POSSIBLE WAY FORWARD

CDM reporting can have global benefits as well as local benefits for reporting countries. Systemically important countries that participate would benefit not only themselves, but would also provide important information about global financial stability. Thus, participation particularly by larger advanced economies, as well as locally systemically important ones, could be especially encouraged. Meanwhile, participation by all countries would be useful to the countries themselves, and therefore all countries should consider the benefits of preparing and distributing CDMs.

The Pilot Project indicates that regular reporting of CDMs may be feasible but further feedback from participating countries and IMF users should be sought. In particular, IMF staff is interested in learning facts from compilers and regulators about any concerns they might have about providing CDM data to the IMF on a regular basis, and whether they would have any additional concerns if these data were to be made public. In this regard, if data are to be made public it may be necessary to develop a separate set of indicators with fewer CDMs and/or stricter reporting thresholds.

If reporting countries are comfortable with the reporting burden and the protection of data confidentiality, CDM reporting could be introduced. In this case, the current list of CDMs could be updated to include the new core FSIs for DTs introduced in the revised *FSI Compilation Guide*. In the same vein, CDMs may also be introduced for OFCs' FSIs, especially for insurance corporations and high-leveraged institutions such as investment banks and hedge funds. However, consideration should also be given to the feasibility for countries to provide the data without involving excessive burden especially in countries with many institutions.

The IMF staff envisions the following next steps in the process to prepare and compile CDMs:

- Reflect the FSIRG's further feedback in the revised *FSI Compilation Guide* in the chapter on concentration and distribution measures.

- Schedule a FSIRG meeting in 2016 to discuss a revised *FSI Compilation Guide* and seek any further feedback on the CDM project.

- In parallel with the revision of the *FSI Compilation Guide*, consider the development of templates for regular CDM reporting.

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Appendix I. FSIRG Composition

FSIRG Members	
ARGENTINA Central Bank of Argentina	**LUXEMBOURG** Central Bank of Luxembourg
ARMENIA Central Bank of Armenia	**MALAYSIA** Central Bank of Malaysia
AUSTRALIA Reserve Bank of Australia	**MAURITIUS** Bank of Mauritius
BRAZIL Banco Central do Brasil	**MEXICO** Comisión Nacional de Valores of México
CANADA Bank of Canada Statistics Canada	**PHILIPPINES** Bangko Sentral ng Pilipinas
CHINA People's Bank of China China Banking Regulatory Commission	**PORTUGAL** Banco de Portugal
CHILE Central Bank	**ROMANIA** National Bank of Romania
COLOMBIA Superintendencia Financiera de Colombia	**RUSSIAN FEDERATION** Bank of Russia
DENMARK Denmarks Nationalbank	**SAUDI ARABIA** Saudi Arabian Monetary Agency
GERMANY Deutsche Bundesbank	**SOUTH AFRICA** South African Reserve Bank
FRANCE Bank of France	**SPAIN** Banco de España
INDIA Reserve Bank of India	**SWITZERLAND** Swiss National Bank
INDONESIA Bank Indonesia	**TUNISIA** Banque Centrale de Tunisie
ITALY Banca D'Italia	**TURKEY** Bankacýlýk Düzenleme Ve Denetleme Kurumu Banking Regulation and Supervision Agency
JAPAN Bank of Japan	**UNITED KINGDOM** Bank of England
LEBANON Central Bank of Lebanon	**UNITED STATES** U.S. Federal Reserve Board