BANK FOR INTERNATIONAL SETTLEMENTS

Financial soundness indicators – looking beyond the lessons learned from the crisis

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1. Introduction

Good morning, everyone, and thank you for inviting me to deliver the keynote address at this workshop on financial soundness indicators (FSIs).

When I received the invitation to speak here, I was wrapping up my stint as Deputy Governor of the Bank of Spain. So, as someone who was working at an institution that actively contributes to and uses FSIs, I had a clear interest in participating in this event. But that interest has obviously increased in my new capacity as Chairman of the Financial Stability Institute (FSI) of the Bank for International Settlements (BIS). And this is not only because the Institute and the indicators bear the same acronym!

The Institute is mandated by its Statute – which dates back to 1999 – to contribute to helping financial authorities around the world to strengthen their financial systems. That entails not only the dissemination of international regulatory standards but also the identification of relevant policy challenges and the promotion of sound practices to address them. In that respect, the quantitative references provided by the FSIs on the state of different financial systems are of great help.

In my address today, I will begin by describing the recent evolution of FSIs, particularly in the context of the lessons learned from the Great Financial Crisis (GFC) and the regulatory reforms in response to it. At the outset, let me just say that the IMF and all the countries that contributed to the revision of the FSIs have done a highly commendable job in enhancing the effectiveness of the indicators in identifying financial system risks and vulnerabilities, as I will discuss subsequently.

I will then offer some thoughts on how the FSIs are likely to evolve in the perhaps not so distant future in order to keep track of financial sector developments. As we all know, the financial system is undergoing rapid technological change in the way financial products and services are delivered. This is likely to disrupt the structure of banking and financial markets. This will also have implications for the distribution of risks and vulnerabilities in the financial system, and thus for the effectiveness of FSIs in alerting to them.

[1] I am grateful to Jermy Prenio for his assistance in preparing these remarks.

2. The financial crisis and the FSIs

The FSIs were introduced following the financial crises of the 1990s to provide country indicators relating to the current financial health and soundness of financial institutions, as well as to that of the corporate and household sectors. The core indicators are based on the CAMELS rating system, which is a widely used supervisory framework for the assessment of individual banks' financial soundness. The framework considers a bank's capital adequacy, asset quality, management, earnings, profitability, liquidity and sensitivity to market risk.[2] Thus, in essence the FSIs follow a microprudential logic. But, when aggregated, they provide a picture of the health of national and global financial systems, and help in pointing to potential vulnerabilities that may need to be addressed with either micro- or macroprudential policies. Indeed, FSIs have become an important input in both the surveillance process conducted by international organisations, such as the IMF, and the macroprudential framework which is being developed in most jurisdictions. In particular, FSIs are commonly used to establish national risk evaluation benchmarks, as input to national financial stability indices and as key quantitative references in national, regional and global financial stability reports.

The GFC, which began in 2007, highlighted a number of weaknesses in the global financial system, including: excessive leverage; insufficiency of high-quality capital and liquidity; inadequate valuation and assessment of banks' risk exposures; a high degree of interconnectedness among financial institutions; and a capital framework that reinforced the inherent procyclicality of the financial system. Those weaknesses called for an ambitious regulatory reform process in the prudential domain, and that process is well advanced. Let me just mention some of the key pieces of the reform before going back to the FSIs.

As part of the global efforts to address the weaknesses identified during the GFC, the Basel Committee on Banking Supervision (BCBS) has overhauled the Basel framework by introducing changes that will improve the quantity and quality of bank capital, raise the minimum own-resources ratios, increase the focus on common equity levels, and add restrictions on leverage. Moreover, the new framework improves the assessment of risks – which was a major weakness and source of losses during the crisis – such as banks' trading book positions, off-balance sheet exposures and counterparty credit exposures arising from banks' derivatives and securities financing transactions. In addition, the reform has added macroprudential elements to the regulatory framework such as a countercyclical capital buffer, a capital surcharge for global systemically important banks (G-SIBs) and a principles-based framework for their domestic counterparts. Moreover, it introduces new liquidity requirements based on two indicators: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). Collectively, these changes are now referred to as the Basel III framework.

As a result, the Basel III framework no longer relies simply on introducing minimum risk-based capital requirements. Other complementary constraints, such as those imposed on leverage ratios, large exposure limits and liquidity ratios, have gained prominence. Moreover, the need has been felt to introduce measures that could help improve the robustness of the design and calibration of risk-based capital ratios. In particular, as you all know, the BCBS is considering ways of making the risk-based capital framework less exposed to undue variations in banks' risk-weighted assets by introducing additional restrictions on the use of internal models. Further changes to the Basel III framework are expected to include improvements to the risk sensitivity of the standardised approaches for credit and operational risks.

I expect that the Basel Committee will soon finalise its new framework and that the new rules, once applied globally, will further help in contributing to the prevention of financial crises. The rules should also ensure a global level playing field for internationally active banks, without unduly damaging their

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[2] Given the lack of adequate quantitative metrics, FSIs do not include an indicator for the management of banks.

ability to perform their intermediation role. That said, the immediate focus of the international regulatory community should be to ensure a consistent implementation of the Basel standards across jurisdictions. Consistency of implementation, especially by internationally active banks, is critical in improving the resilience of the global financial system, promoting consumer and investor confidence, and ensuring fair competition in the provision of financial services.

But, of course, the crisis did not only reveal weaknesses in the international regulatory framework. It also highlighted a significant lack of reliable indicators of financial sector vulnerabilities.

In particular, the crisis showed that available FSIs did not have sufficient early warning properties. Existing core FSIs often presented comforting signals regarding systemic stability. But such signals later proved unsound. The FSIs failed to identify the deterioration of banks' assets, the substantial increase in off-balance sheet exposures and the emergence of serious liquidity risks. They also overestimated the actual risk absorption capacity of banks by relying on flawed risk-based capital ratios. Moreover, by only providing country aggregates, FSIs concealed the particularly weak position of certain specific institutions that ended up triggering systemic instability.[3]

Fortunately, similarly to what happened in the international regulatory arena, the FSIs were revised in 2013 to address a number of identified shortcomings. I am sure that you are all familiar with them, but allow me to outline the main revisions. First, they involved improving existing FSIs and introducing new ones that were better aligned with the regulatory indicators introduced under Basel III such as the new risk-based capital ratios, leverage ratios and liquidity ratios. Since the Basel III metrics were designed to better capture banks' risk exposures, by extension the FSIs have also become more risk-sensitive and more effective in reflecting the banking system's risk profile.

Second, new indicators were added to expand the coverage of the financial sector to include money market funds, insurance companies, pension funds and other non-bank financial institutions. Lastly, the FSIs were augmented by concentration and distribution measures that provide information on tail risks.[4]

The revisions to the FSIs should help make them more informative. At the same time, the alignment of some indicators with the Basel III concepts is consistent with the effort by the international regulatory community, including by the Institute, to promote a consistent implementation of the new standards.

3. The important role of FSIs in assessing financial sector risks

The excellent work done by the IMF in revising the FSIs has made them more effective in assessing financial sector risks as well as in pointing out issues that are of concern to financial sector supervisors.

Allow me to illustrate this by referring to the most relevant medium-term risks for financial stability worldwide.

Undoubtedly, banks now generally have higher and better-quality capital levels, and more robust funding and liquidity profiles. However, financial institutions in several advanced economies are experiencing weak profitability. This is a concern because low margins undermine banks' capacity to sustain capital levels during adverse economic conditions, reduce their incentives to properly evaluate assets and dampen their ability to support the real economy.

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3 R Johnson et al, "Addressing information gaps", *IMF Staff Position Note*, no SPN/09/06, 26 March 2009.

4 International Monetary Fund, *Modifications to the current list of financial soundness indicators*, 13 November 2013.

Subdued profits in the recent past can be partly attributed to conjunctural developments, such as extremely accommodative monetary conditions and weak growth, as well as to the need to provision for large stocks of legacy problem loans. However, low profitability seems equally well rooted in more structural developments such as the secular trends pushing down nominal and real interest rates, the new more stringent regulatory framework – in both the prudential and resolution domains – and sharper competition from non-bank financial companies and technological firms in some areas traditionally occupied almost exclusively by banks. This seems to suggest that there is overcapacity in the banking sectors in some parts of the world, particularly in Europe, which may eventually lead to financial stability risks. In that context, it may make sense for financial authorities to facilitate an orderly correction of that excess capacity through timely corporate actions. In Europe, this process should ideally take the form of cross-border mergers, as a more integrated banking market in the euro zone would potentially constitute a powerful risk-sharing mechanism that would help strengthen the functioning of monetary union.

In any event, an immediate concern for supervisors is whether banks are trying to mitigate the negative impact of low interest rates by taking up more risk. For example, in some advanced economies banks are increasing their exposure to higher-yielding overseas assets. However, this business strategy is being challenged by the rise in hedging and foreign funding costs.

With respect to emerging market economies, high corporate leverage – often with debt instruments denominated in foreign currencies – remains a concern. This has already resulted in a worsening debt service capacity of corporates in some economies, with commodity-related firms among the most vulnerable. In addition, the concentration of corporate debt in a few firms is a matter of concern in several jurisdictions. For example, the top 10 companies account for a majority of the aggregate corporate debt stock of most Latin American economies.[5]

Those risks figured prominently in the results of a survey conducted by the Institute last year. The survey focused on supervisory priorities and challenges in 73 jurisdictions.[6] The top challenges identified included: (i) financial technology (fintech); (ii) a low or negative interest rate environment; (iii) commodity price volatility; (iv) asset price bubbles; and (v) rising non-performing loans (NPLs).

I believe that almost all of these risks and challenges can be assessed either directly or indirectly by the use of FSIs, with the newly introduced FSIs playing a particularly important role. Let me mention some of them:

- For example, the quality of capital, funding and liquidity profiles can now be assessed with the introduction of the ratio of Common Equity Tier 1 (CET1) to risk-weighted assets (RWA) as well as the BCBS liquidity ratios.
- Moreover, asset quality can be examined by indicators such as the NPL ratios and the provisioning coverage ratio. In addition, the impact of a low interest rate environment on profitability is reflected in the ratio of interest margins to gross income.
- Also, the overseas expansion and foreign currency exposure of banks can be assessed by geographical distribution and currency-related exposure indicators.
- Finally, for the corporate sector, leverage and debt service capacity can be derived from relevant FSIs, including the newly introduced ratio of earnings to interest expense for non-financial corporations (NFCs). And, for commodity-exporting jurisdictions, the profitability indicators of their NFCs (including the new measure of returns on assets) will reflect commodity price volatility.

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5 International Monetary Fund, *Global Financial Stability Report*, October 2016.

6 Financial Stability Institute, "Supervisory priorities in non-BCBS jurisdictions", *Occasional Papers*, no 13, October 2016.

It could be argued, though, that some structural factors affecting bank profitability could be better represented in the set of FSIs. For instance, potential overcapacity and the scope for further consolidation could be illuminated by indicators of concentration in the banking industry.

In addition, an indicator of debt concentration across firms might provide a good measure of the possible pockets of vulnerability in the corporate sector. The FSIs already include indicators of credit growth to the private sector and of the sectoral distribution of lending, but these would not be sufficient to assess and monitor debt concentration in the affected economies.

Moreover, the assessment and monitoring of risks and challenges that will be brought about by the emergence of fintech is another area that could be explored. This would ensure that statistical information on the health of the international and national financial systems is able to respond to rapid structural change.

Let me indeed now say a few words about the link between technology and finance in the last part of my intervention.

4. The technological challenge

The Financial Stability Board (FSB) defines fintech as "technologically-enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services"[7].

The interest in fintech is evidenced by the amount of venture capital and other private investment that has been pouring into fintech companies over the past few years. It is estimated that such investments rose from only $2 billion in 2010 to about $21 billion in 2016: a tenfold increase in just six years.[8] And this number does not even include direct investment by existing banks in fintech companies or in their own fintech capabilities.

These facts underscore the need to consider the implications of fintech for the monitoring of risk in the financial sector. Indeed, banking supervisors worldwide have already taken note. As mentioned earlier, fintech came out at the top of the list of supervisory challenges identified in the survey conducted by the Institute last year. In addition, fintech has been incorporated in the workplan of both the FSB and the BCBS since 2016.[9]

One of the appeals of fintech is that it can contribute to the democratisation of finance. Technology may allow individuals and households to participate in financial activities without the need (or at least with a very limited one) for intermediaries. Peer-to-peer (P2P) lending platforms, for example, provide simple venues where borrowers and savers can transact on mutually agreed terms. Therefore those platforms can facilitate access to finance and broader investment opportunities for households. Moreover, fintech has become instrumental in amplifying the set of available payment mechanisms for all types of

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7 M Carney, "The promise of FinTech – something new under the sun?", speech by the Governor of the Bank of England and Chair of the FSB at the Deutsche Bundesbank G20 conference on *Digitising finance, financial inclusion and financial literacy*, Wiesbaden, 25 January 2017.

8 Citi, "Digital disruption – revisited", *Global Perspectives & Solutions*, 23 January 2017.

9 Financial Stability Board, "FSB Chair sets out to the G20 the FSB work programme for 2016", 27 February 2016, http://www.fsb.org/2016/02/fsb-chair-sets-out-to-the-g20-the-fsb-work-programme-for-2016/. In 2016, the BCBS also formed a Task Force on Financial Technology.

client. The new payment and investment opportunities provided by fintech, if properly structured and regulated, could therefore do much to promote financial deepening.

Despite the potentially positive implications of technological developments for finance, a cautious – but not overly defensive – regulatory approach is called for. In principle, most existing fintech firms are not engaged in the transformation of credit or maturity risk and, therefore, have limited potential to generate systemic instability. Accordingly, there is little point in subjecting such firms to the sort of prudential requirements applied to banks, even if they sometimes compete in similar market segments.

At the same time, it is clear that new technologies and players could lead to new operational and conduct-of-business risks. In particular, they will most likely alter the competitive environment, the risk-return profile of different business lines and the transmission of shocks across firms. The potential financial stability repercussions of those developments are what should be explored by the regulatory community, as the FSB is now doing.

In any event, as those fintech firms gain market share, it seems logical that indicators of their activity should also be included in the FSIs. This points to the need for a more granular breakdown in "Other Financial Corporations" (OFCs), which are currently only subdivided into money market funds, insurance corporations, pension funds and other OFCs.

Furthermore, if the market share of these fintech firms becomes significant in, say, P2P lending or crowdfunding platforms, certain core FSIs will need to be revisited. In particular, measures of indebtedness of the non-financial sector should eventually incorporate borrowing through fintech firms.

Moreover, FSIs may also have to adjust to the use of new technology in the supervisory process itself. In particular, it is likely that big-data techniques will soon become a key input to the monitoring of risks in the financial system.

Indeed, there is already significant interest in big data at the senior policy level of central banks. A 2015 survey by the Irving Fisher Committee on Central Bank Statistics (IFC)[10] showed that 61% of the 69 respondent central banks had very high, high or medium interest in big data, and almost a third of the respondents were already using big-data sources. For financial stability purposes, in particular, respondents expect big data to be potentially useful in measuring credit and market risks, monitoring capital flows and understanding financial market behaviour.

Whether and how big-data techniques could help develop FSIs in the future remains uncertain at this stage. Yet the evidence that will accumulate over time from supervisors around the globe using big data can only help develop more informative summary indicators of financial soundness. The designers and managers of FSIs should therefore keep an eye on the evolution of the techniques adopted by financial supervisors and closely liaise with them to regularly update the indicators.

That said, we should always be mindful of the limitations of FSIs. They can never by themselves provide in-depth knowledge of risks affecting specific institutions or financial systems. This is something that only intrusive financial supervision can achieve. Moreover, while standard FSIs will always remain a key tool for analysts and market participants, we must recognise that supervisory work is already moving beyond the monitoring of a few static quantitative variables, such as balance sheet data. Indeed, the oversight of banks is increasingly relying on a more comprehensive and forward-looking set of analytical tools such as stress tests, assessments of the sustainability of business models and analyses of qualitative aspects such as corporate governance and business culture.

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[10] Irving Fisher Committee on Central Bank Statistics, *Central banks' use of and interest in 'Big Data'*, IFC Report, October 2015.

5. Concluding remarks

What I have done so far is basically akin to looking beyond the glass wall of my office at a certain time of day. At such a time, the amounts of light reflected by and refracted through the glass are about the same, so I can see outside as well as inside my office. This enables me to perceive my entire surroundings.

In the same way, it is important to look not just at the reflections we have of the crisis but also at what could be in store for us beyond the current situation. The FSIs have come a long way from their initial design of the early 2000s. The lessons learned from the GFC have led to significant revisions. But it is also important to look beyond the lessons of the GFC and try to assess whether FSIs, in their current form, will continue to be effective in serving their purpose given the rapid structural changes taking place in financial systems. The emergence of new technologies with broad potential applications will certainly oblige us to explore alternatives.

Given our complementary objectives, the Institute would be more than happy to contribute to the effective implementation of the revised FSIs as well as to the continuing efforts to improve them.

Thank you very much for your attention, and I wish you a productive workshop.