IEO
Independent Evaluation Office
of the International Monetary Fund

BACKGROUND PAPER

BP/18-02/03

IMF Multilateral Financial Surveillance

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December 14, 2018

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* Peterson Institute for International Economics. The author gratefully acknowledges, without implication, comments by and conversations with Jeffrey Anderson, Stephen Cecchetti, and Olivier Jeanne, and participants in an IEO workshop held on August 23, 2018. Jean-Pierre Landau contributed Annex 3.

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ABBREVIATIONS

AE	advanced economy
BRRD	Bank Recovery and Resolution Directive
BIS	Bank for International Settlements
ECB	European Central Bank
EM	emerging market economy
ETF	exchange traded fund
EU	European Union
EWE	Early Warning Exercise
FCI	Financial Conditions Index
FDMD	First Deputy Managing Director (IMF)
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
G20	Group of Twenty
GaR	growth at risk
GDP	gross domestic product
GFC	Global Financial Crisis
GFSR	*Global Financial Stability Report*
IMFC	International Monetary and Financial Committee
MCM	Monetary and Capital Markets Department (IMF)
NPL	non-performing loan
OFR	U.S. Office of Financial Research
RES	Research Department (IMF)
SIP	Selected Issues Paper
SCAV	Standing Committee on the Assessment of Vulnerabilities
WEO	*World Economic Outlook*

EXECUTIVE SUMMARY

This paper evaluates IMF multilateral financial surveillance during 2013–17, with a focus on the analysis of macrofinancial vulnerabilities and risks in the *GFSR*; the alignment between the *GFSR*, the *WEO*, IMF staff G20 Notes, and the Early Warning Exercise (EWE); and the consistency of messages of the *GFSR* and bilateral financial surveillance of the U.S. and the Euro Area.

The Good. IMF multilateral financial surveillance has come a long way towards addressing its pre-crisis weaknesses. Vulnerability analysis covered a broad array of topics, including novel risks due to changes in the structure of financial markets, market liquidity, the growing role of non-bank intermediation, and spillover channels from emerging market economies to advanced economies. Chapter 1 of the *GFSR* generally succeeded in building coherent, data-backed narratives. The analytical chapters of the *GFSR* were typically strong and innovative, with the best on a par with the best of the *WEO*. The policy messages and risk assessments in the *GFSR* and the *WEO* were well-aligned. The IMF's contribution to the EWE has been of high quality, often raising risks and policy challenges long before they were discussed in the *WEO* and *GFSR* and by the broader public. The messages transmitted by IMF bilateral and multilateral financial surveillance of the U.S. and the Euro Area were generally consistent, and in some respects complementary.

The Bad. Some Chapter 1 *GFSR* narratives were not sufficiently backed by data and analysis, leading to strong statements that had to be modified or nuanced later on. Of six "near-crisis" events during 2013–17, only one was discussed in any depth as a financial stability risk ahead of time; in particular, the *GFSR* failed to recognize and analyze the consequences of a possible collapse of commodity prices until after it had happened. Chapter 1 was often a difficult read, lacking an opening summary comparable to the first few pages of the "Recent Developments and Prospects" in the *WEO* and overwhelming the reader with a dizzying array of complex charts and an ever-shifting structure. While the replacement of the traditional "Global Financial Stability Map" with a global financial conditions index and the "Growth at Risk" framework is a huge improvement, there is a risk that this framework will be seen as a new "black box." While not inconsistent, the FSB and IMF contributions to the EWE were not well integrated; and the EWE failed to reach policymakers except for those that were in the room during the EWE presentation.

Main recommendations. Chapter 1 narratives based on "market intelligence" and empirical analysis should be better aligned, including by coordinating more closely with the *GFSR* analytical chapters. Reducing the number of analytical chapters is a step in the wrong direction, since these chapters often provide the most cutting-edge material. As far as possible, the data and analyses used in the *GFSR* should be published or at least made available to authorities and other parties with a legitimate interest. IMF area departments should be given more time to review this data. Chapter 1 of the *GFSR* would benefit from an opening section which summarizes the most relevant new information; this could be updated and published every quarter. To improve EWE dissemination, the IMF and the FSB could present the EWE to additional audiences.

I. INTRODUCTION

1. In the 2000s, the IMF failed to detect key risks leading up to the 2008 global financial crisis (GFC) (IEO, 2011). This led to an effort, beginning in 2009, to deepen and better link multilateral and bilateral IMF financial surveillance; add analytical reports to fill surveillance gaps; and better engage with policymakers involved in international policy coordination through the Early Warning Exercise (EWE) and "Global Prospects and Policy Challenges," a briefing note written by IMF staff for the G20 (hereafter "G20 Notes"). Several assessments in 2014 concluded that progress had been made (IEO, 2014; IMF, 2014; Li and Tucker, 2014; Knight and Ortiz, 2014; Robinson, 2014; Rogoff, 2014). But these studies also flagged areas for further improvement, including: better integration of the analysis and messages of the *World Economic Outlook (WEO)* and the *Global Financial Stability Report (GFSR)*, published by the Research Department (RES) and Monetary and Capital Markets Department (MCM), respectively; better integration of bilateral and multilateral surveillance (and specifically, more systematic use of multilateral surveillance to inform country work); and better communication of key multilateral financial surveillance recommendations.

2. The present paper evaluates IMF multilateral financial surveillance during 2013–17, with a particular focus on the analysis of macrofinancial vulnerabilities and risks in the *GFSR*, and on the questions raised by the previous generation of assessments. Did the *GFSR* convincingly analyze vulnerabilities and identify relevant risks? How successful was it in complementing "market intelligence" with empirical analysis? How well integrated and consistent were the messages of the *GFSR* and the *WEO*? How did they relate to those expressed in G20 Notes and the EWE? Does the division of labor across these reports make sense? Were the analyses and messages from the *GFSR* reflected in the analysis and recommendations in Article IV Staff Reports for major financial centers? Conversely, does the *GFSR* make appropriate use of the country and institutional knowledge available in IMF area departments?

3. The paper finds that IMF multilateral financial surveillance has come a long way towards addressing its pre-crisis weaknesses. However, there is room for further improvement:

- *GFSR* vulnerability analysis covered a broad array of topics, including novel risks associated with changes in the structure of financial markets, international banks, market liquidity, the growing role of non-bank intermediation, and spillover channels from emerging market economies (EMEs) to advanced economies (AEs). The analytical coverage of these and other topics was usually strong, although with exceptions. Chapter 1 can be improved in both substance and presentation, and better linked to the analytical chapters of the *GFSR*. The *GFSR* data should also be published, documenting methodological differences with respect to data used by the authorities.

- With respect to flagging risks, the most obvious blind spot during the 2013–17 period was the failure of both the *GFSR* and the *WEO* to analyze the financial stability risks associated with a global decline in commodity prices until after the decline happened.

Furthermore, short-term risk analysis in the *GFSR* often seemed reactive to risks that had recently been realized, rather than forward-looking.

- The messages of the *GFSR* and the *WEO* were consistent during the period surveilled, both with regard to policy and with respect to risks. This appears to reflect a successful coordination effort of the two authoring departments. The division of labor among the *GFSR*, *WEO*, G20 Notes, and the EWE is appropriate relative to their respective audiences and comparative strengths. During the 2013–17 period, the EWE was successfully differentiated from other multilateral surveillance instruments, focusing increasingly on longer-term structural changes and risks. While this made EWE presentations unique and often thought-provoking, it also may have created a gap, perhaps taking away an opportunity to discuss a narrower set of macrofinancial risks in a small circle of very senior policymakers.

- Bilateral and *GFSR* surveillance of major systemic financial centers and regions such as the U.S. and the Euro Area and financial surveillance led to differentiated, but generally consistent, analyses and policy recommendations. The influence of the *GFSR* was noticeable in Article IV reports on the U.S. and the Euro Area, while the reverse influence was less clear. On several occasions, the *GFSR* emphasized particular vulnerabilities before they were discussed in the Article IV consultations. However, not all "risk narratives" of the *GFSR* were translated into Article IV surveillance; with the U.S. Article IV team feeling that the *GFSR* was overstating some of these risks.

4. The *GFSR* has undergone several changes in 2018. Though outside the evaluation period, the question of whether these changes seem go in the right direction or not is briefly addressed in Section II and the conclusions of the paper.

5. The remainder of the paper is structured as follows. Section II focuses on the *GFSR*, discussing first its vulnerability analysis and second its success in identifying relevant risks. Section III deals with the relationship between the *GFSR* and other IMF multilateral surveillance instruments—the *WEO*, G20 notes, and EWE. Section IV addresses the consistency between the vulnerability analysis and policy messages of the *GFSR* with IMF surveillance of the U.S. and the Euro Area. A concluding section summarizes the main recommendations.

II. Analysis of Macrofinancial Vulnerabilities and Risks in the *GFSR*

6. All *GFSRs* during the evaluation period explicitly or implicitly distinguish between "vulnerabilities" and (downside) "risks." In this context, a "vulnerability" refers to a feature (stated variable) of the financial system that—in conjunction with a shock, a shift in expectations, or a rise in risk aversion—can lead to a crisis or make it worse. A "downside risk" is an adverse event that is assigned low but non-negligible probability. Risks materialize as a result of the combination of vulnerabilities and shocks (or shifts in expectations or confidence).

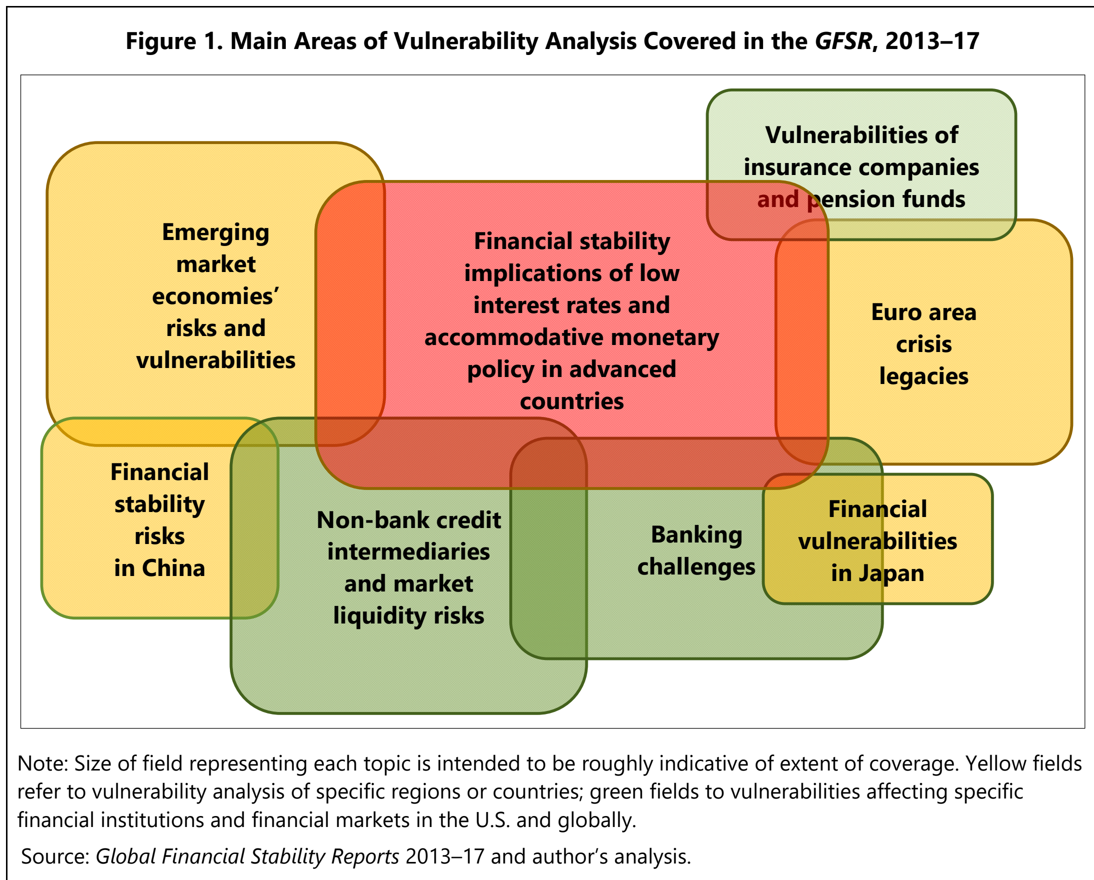
7. The *GFSR* seeks to both contribute to the analysis of financial vulnerabilities and take a view on risks—both imminent and over the medium term. The two subsections that follow attempt to examine how successful the *GFSR* has been in both dimensions.

A. Vulnerability Analysis

8. The bulk of *GFSR* analysis during 2013–17 focused on eight areas of vulnerability, all with macrofinancial relevance (Figure 1). Of central concern were the financial stability implications of sustained low interest rates in the U.S. and other advanced countries. Intersecting with this concern were vulnerabilities of U.S. and global financial institutions (banks, non-bank credit intermediaries, insurance companies, and pension funds), market liquidity risks, and vulnerabilities in specific regions and countries outside the U.S. (emerging markets, China, the Euro Area, and Japan). The *GFSR's* analysis in each of these areas is summarized in Annex I.

9. *GFSR* vulnerability analysis during the evaluation period was comprehensive, leaving no obvious gaps. It was also typically backed by data shown in charts and tables, and sometimes by analytically ambitious empirical research. Based on this initial impression, the *GFSR* would seem to have met the standard that one would expect from the post-GFC revamping of IMF financial surveillance.

Figure 1. Main Areas of Vulnerability Analysis Covered in the *GFSR*, 2013–17



Note: Size of field representing each topic is intended to be roughly indicative of extent of coverage. Yellow fields refer to vulnerability analysis of specific regions or countries; green fields to vulnerabilities affecting specific financial institutions and financial markets in the U.S. and globally.

Source: *Global Financial Stability Reports* 2013–17 and author's analysis.

10. The remainder of this section attempts to identify specific weaknesses and areas in which the *GFSR*'s vulnerability analysis could be further improved. It starts by collecting reader opinions on the *GFSR*. But this has its limitations because the *GFSR*'s purpose—to contribute to global financial stability through analysis and policy recommendations—may require taking positions that could trigger a defensive reaction from some official sector readers. An alternative is to assess the *GFSR* against a benchmark. One such benchmark could be analogous surveillance reports produced by other institutions, such as the Bank for International Settlements (BIS), and the central banks of systemic financial centers. While the *GFSR* generally looks quite good in such comparisons—its combination of global coverage and analytical ambition does not seem to be matched by any other report—this is in part because "competing" reports usually differ in terms of their aims, perspective, geographical coverage, and sometimes periodicity (see Box 1). Hence, the approach pursued in this paper is to benchmark the *GFSR* not against competing reports but rather against a particular interpretation of its own aims and ambitions as outlined below—that is, against the "ideal *GFSR*."

Box 1. Financial Stability Reports by Other Institutions

The closest analogues to the *GFSR* at the national or regional level are financial stability reports published by central banks—such as the *Financial Stability Report* of the Bank of England (created in 2006 as the successor of the bank's Financial Stability Review, which had existed since 1996), the *Financial Stability Review* of the European Central Bank (since 2004)—or in some cases by independent government agencies, such as the U.S. Office for Financial Research (OFR). Like the *GFSR*, these are periodic (semi-annual or annual) publications that seek to identify key stability risks in their respective financial system. They differ from the *GFSR* in two respects. Most obviously, they are focused on particular financial systems, with global financial risk covered only to the extent that it appears relevant to the respective jurisdiction. Furthermore, for the most part (the OFR is an exception) they are issued by the same agency that is partly or wholly responsible for financial stability. This affects the tone and content of the reports, which tend to be somewhat more guarded than the *GFSR*, and of course the policy discussions, which tend towards explanations of policies rather than policy recommendations by a third party.

The only other institution that produces periodic independent global financial stability assessments is the Bank for International Settlements (BIS). Global financial stability, and policy advice on how to attain it, feature prominently in the BIS *Annual Report*, which in 2018 was restructured and renamed *Annual Economic Report*. However, the *Annual Economic Report* analyzes economic as well as financial developments and focuses on monetary policy as well as financial stability policies—in effect, combining the perspectives of the *GFSR* and the *WEO*. A bit closer to the *GFSR* in scope and structure is the *BIS Quarterly Review*. The September, December, and March issues of the *Quarterly Review* are divided into a section on *International banking and financial market developments*, which is in some sense analogous to Chapter 1 of the *GFSR*, and a section with *Special features*, analogous to the *GFSR*'s thematic chapters. The *International banking and financial market developments* section tends to be primarily descriptive, while the *Special features* section consists of four to five short pieces written by small teams of BIS staff on relatively narrow financial sector topics. In contrast, thematic chapters in the *GFSR* tend to be longer pieces on "big questions" written by larger teams, typically with the support of outside academic consultants, based on new data or new empirical analysis.

User views on the *GFSR*

11. Since the *GFSR* aims to provide analysis and policy recommendations that will help maintain global financial stability, its core audience are the policymakers that could, in principle, implement those recommendations. At the same time, *GFSR* vulnerability analysis could also help prevent crises through the reactions of financial market participants, particularly by helping to price risks correctly. The question is how these communities—government and central banks officials on the one hand, and private sector economists that advise asset managers and traders making investment and pricing decisions on the other—perceive the *GFSR*.

12. ***Official sector views***. Between mid-2017 and the Spring of 2018, members of the IMF financial surveillance evaluation team conducted interviews with officials from Brazil, China, the European Union (the European Commission, the ECB and the European Banking Authority), France, Germany, Italy, Japan, Malaysia, Mexico, Singapore, Thailand, the U.K., and the U.S. While these interviews focused on authorities' experiences with IMF bilateral financial surveillance, they also explored the authorities' views on the *GFSR*. The following points emerged:

- The *GFSR* is widely read in capitals, particularly by central bank officials, as well as some officials in ministries of finance and regulatory and supervisory agencies.

- Notwithstanding some concerns about readability and length, most of the interviewed officials were appreciative of the *GFSR*, particularly as a summary of the state of global financial development, in its analysis of global financial linkages and as a source of cross-country comparisons. Some of the analytical chapters—including the April 2015 chapter on the asset management industry and the October 2015 chapter on market liquidity risks—received particular praise.

- Several officials were critical of the *GFSR*'s analysis of their own country or financial system. Some officials—for example, in China, and some Euro Area national authorities—viewed the *GFSR* as too alarmist, lacking in nuance, and too generic in its policy advice. Others argued that because the *GFSR* focuses on low-probability risks, it was less useful for policymakers than bilateral surveillance. This said, the *GFSR* also received respect for its willingness to raise concerns in a candid way, and its views on the Euro Area banking system (and their articulation by IMF management) were viewed as impactful by several EU officials.

- Many officials—including some that were appreciative of the *GFSR*'s analysis and policy recommendations—were critical of the *GFSR*'s use of data. A widely held view is that the *GFSR*, which relies on its own databases drawn from a variety of public and market sources, is not careful enough in ensuring that these are consistent with those used by the authorities and in IMF area departments—and when they are not, in explaining what might be driving the differences—and that this can lead to errors either of fact or interpretation.

13. ***Private sector views***. Another group of individuals that appears to include at least some regular readers of the *GFSR* are private sector economists whose job includes assessing crisis risks and predicting policy actions. A small poll conducted among nearly one dozen economists in this group (Annex 2) suggests that they read the *GFSR* not as an update on the state of the global financial system, but for its "depth of the work which … often provides data that is not easy to obtain unless one has the resources and access of the IMF" and its "deep dives" in analytical chapters, boxes, and other "hidden gems." A few respondents were critical of Chapter 1, viewing it as "out of date given production times" and "too dense—by comparison, the *WEO* is much better." One respondent thought that the "*GFSR* has a clear bias … towards playing up the downside risks," but another thought that the *GFSR* did not go far enough in calling out some risks, while yet another called the *GFSR* "atypically hard hitting for the Fund" but implied that this was a good thing. Three of the 10 respondents mentioned the *GFSR*'s work on European banks as "quite important," "candid and direct," and "particularly good."

Assessing the *GFSR* against its own ambitions

14. Based on its history, which began in 2002 when the *GFSR* replaced two existing publications (the annual *International Capital Markets Report* and a quarterly Emerging Market Financing note, both produced by the RES), the *GFSR*'s aims can be interpreted as follows:

- First, the *GFSR* has a "translational" function. The purpose of creating the *GFSR* and assigning it to a new department that included both research economists and newly recruited market economists was to reach outside the IMF "bubble," absorb the latest "market intelligence" through regular contacts with market participants, and use this to build a set of data-based narratives about emerging financial stability risks that could be easily absorbed by the broader policymaking community and linked to the IMF's analysis of macroeconomic developments.

- Second, the *GFSR*'s job is to pass these narratives through an analytical filter, subject them to empirical testing, clarify underlying mechanisms and assess their quantitative significance, and conduct robustness checks. Some of this can happen in Chapter 1 itself (including in boxes). For more detailed and technical empirical research, each *GFSR* includes analytical chapters. Overall, the *GFSR* should meet the same intellectual standard as the *WEO*.

Historically, the *GFSR* has struggled in both respects. The clarity of the writing used to be nowhere near that of the *WEO*. And it was often accused of being a shallower product and repeating market anecdotes without sufficient substantiation.

15. Measured by this benchmark, the *GFSR* came a long way during the 2013–17 evaluation period. Chapter 1 generally succeeded in building coherent, data-backed narratives. Its "translational" contribution was arguably higher than that of the *WEO*. While Chapter 1 of the *WEO* may be the single best data-backed narrative of where the world economy is heading, one

can get a good approximation by reading a few competent newsletters of major investments banks and/or publications of other international organizations. In contrast, Chapter 1 of the *GFSR* builds narratives based on data that is harder to come by, including public but hard-to-collect balance sheet information and proprietary data from commercial sources.

16. This said, Chapter 1 continues to suffer from presentational weaknesses. It has so far not found a transparent, easily digestible way of tracking the evolution of financial stability risks over time and explaining what data is driving these changes. Compared to the *WEO*, it is still a harder read, confusing the reader with its ever-changing structure, the lack of a standard set of tables, and a dizzying number of complex charts. While some of this can be justified by the presentational challenges posed by its more ambitious "translational" function—it must synthesize a broader, less familiar, more heterogenous array of information—there remains scope for improvement, as elaborated below.

17. The analytical standard of the *GFSR* during 2013–17 was generally high. The best of the *GFSR*'s analytical chapters were on a par with the best of the *WEO*, often based on impressive data-gathering exercises. Most claims made in Chapter 1 were backed by one or several charts—sometimes based on complex empirical analysis, and often difficult to understand—and in some cases boxes. Some claims were subsequently explored in the *GFSR's* analytical chapters.

18. At the same time, there continued to be strong claims in Chapter 1 that were not substantiated or took several *GFSRs* to substantiate (and then mutated in the process):

- One example was the claim, during 2015–16, that fast disposal of non-performing loans (NPLs) would be key to restart credit growth in the Euro Area (see Anderson, 2018; Landau, 2018). While the *GFSR* may have been broadly right, it did not provide enough evidence to back up this claim. As more thorough evidence emerged, it was forced to adjust its policy recommendation.[1]

- One of the most important—and, in the end, successful—narratives of the 2013–15 *GFSRs* was the claim that market liquidity risks were on the rise. However, the story mutated over time, as it was gradually checked analytically. While the 2013 *GFSRs* emphasized the growth of leveraged instruments, the more important channel—introduced in 2014 and eventually confirmed in an excellent April 2015 analytical chapter—turned out to be redemption risks associated with "plain vanilla" funds such as mutual funds and exchange-traded funds (ETFs). Furthermore, some initial assertions—in

[1] Until April 2016, the *GFSR* advocated an aggressive strategy to reduce NPLs in the Euro Area as it assumed that this would free regulatory capital and boost lending (see Box 1.3, October 2015 *GFSR*). But the October 2016 *GFSR* (Figure 1.14) presented new estimates indicating that without structural reforms, disposal of NPLs could have a large *negative* impact on bank capital, and the emphasis shifted from selling NPLs as fast as possible to reforms that would boost the price that investors would be willing to pay for NPLs.

particular, that diminishing liquidity was an unintended consequence of regulation—could not, in the end, be confirmed.

19. Conversely, there were at least some examples in which policy recommendations established in the analytical chapters of the *GFSR* are subsequently not carried forward in Chapter 1. The most glaring case refers to the regulatory treatment of sovereign exposures of banks, an important and controversial topic in the Euro Area reform debate. This was analyzed in two thematic chapters in the April 2012 *GFSR*, one of which concludes that "for banks, sovereign debt should ultimately carry assigned risk weights that more accurately reflect the relative credit risk of the issuing sovereign" while cautioning that "[a]ny change to risk weights should be introduced gradually and reviewed periodically to avoid market disruptions" (IMF, 2012). Surprisingly, the topic does not re-appear in any *GFSR* during the evaluation period nor in any Euro Area Article IV staff report until 2016.

Implications and recommendations

20. The preceding subsections suggest four potential issues with the *GFSR*'s vulnerability analysis. First, its general approach—that is, the attempt to produce a "hard-hitting" document that makes strong claims on emerging vulnerabilities and risks in the global financial system, possibly to the detriment of nuance. Second, the analytical backing of Chapter 1 claims and the relationship between Chapter 1 and the analytical chapters. Third, the use and transparency of data, particularly in Chapter 1. Fourth and finally, issues related to the presentation and structure of Chapter 1.[2]

21. ***General approach***. This evaluation does not share the view of some country officials that the *GFSR* was excessively alarmist. While the *GFSR* needs to be sensitive to country authority criticism of its data, analysis, and policy recommendations, this must not come at the expense of candid analysis of emerging vulnerabilities and risks—including low probability risks. "Ruthless truth-telling" is often demanded of international organizations (King, 2006, citing Keynes) but rarely achieved. A reputation for candor is hence something to be cherished and defended.

22. Furthermore, the *GFSR* needs to be judged in the context of the IMF's portfolio of publications. It coexists with several other surveillance instruments with different objectives, including the *WEO*, which focuses on the baseline outlook rather than risks, and bilateral surveillance documents, which provide country or regional nuances. Provided they learn from each other and do not reach contradictory conclusions—to be examined below—these documents are useful complements. There is a trade-off between "nuance"—best delivered by a surveillance team focused on a specific country or area—and the desire to avoid capture by the views of national authorities. The latter is most likely to succeed when a team is firmly focused on

[2] Annex 3, prepared by Jean-Pierre Landau, expounds on these issues, in particular on how Chapter 1 of the *GFSR* is prepared and on the need for greater transparency on the data and methodology in its analysis.

emerging vulnerabilities and not assigned to any particular country, as is the case for *GFSR* teams.

23. Rather than submitting country-specific findings to the authorities for review in advance of publication, as some officials suggested—or otherwise yielding to pressures that would compromise its independence—country criticism should be addressed by ensuring that controversial findings and policy recommendations are reliably on the mark. This requires that (i) the narratives of Chapter 1 are convincingly backed by empirical analysis, and (ii) the data and methodology underlying this analysis can be shared and any differences with respect to data used by national authorities explained.

24. ***Better analytical backing of Chapter 1 "narratives."*** There is scope for even closer alignment between narratives based on "market intelligence" and empirical analysis. This can be achieved in two ways. The analytical prowess of the full *GFSR* team (including the division responsible for the analytical chapters), and of the IMF more broadly, should be deployed more quickly, and more systematically, to back (or reject) Chapter 1 narratives. If this is not possible within the requisite time frame, but a story nonetheless sounds compelling and appears to be consistent with the data, there is probably an argument for presenting it, but in a less definitive tone than is currently typical for Chapter 1.

25. Improving the alignment between Chapter 1 and the analytical chapters may require organizational changes. Unlike the *WEO* team, which sits in one division, the *GFSR* is produced by two teams, one of which is responsible for Chapter 1 and the other for the analytical chapters. MCM may want to consider combining these teams or integrating them better. MCM's July 2018 decision to place both teams under the supervision of a single deputy director is an important and welcome step in this direction.

26. In the Spring of 2018, MCM announced some changes to the analytical chapters. These are supposed to become much shorter and are to be reduced in number from four to two per year, with scope for an additional chapter in exceptional cases. These changes appear to be motivated by the desire to make the *GFSR* easier to absorb, but they go in the wrong direction. While brevity is always desirable, the main issue with the *GFSR* is not that the analytical chapters are too long or too hard to read: it is that Chapter 1 is too hard to read and does not always back up its narratives. Many official and private sector users believe that the analytical chapters constitute one of the most important, or even the most important contribution, of the *GFSR*. Reducing the number of analytical chapters would reduce that contribution, and imposing additional ex ante constraints on the number and presentation of analytical chapter misses the main point, which is to better align the analytical chapters with Chapter 1.

27. ***Better data transparency and review***. The *GFSR* does not presently publish the data underlying its charts and tables (except for making the charts and tables themselves available electronically as a courtesy). This is a mistake: the use of data particularly in Chapter 1 is the area in which the *GFSR* drew most criticism from officials (including officials otherwise sympathetic to

the *GFSR*'s candor and recommendations). In part, this seems to reflect the fact that the authorities simply do not recognize the data underlying some charts and tables and do not have the means to reproduce them. In other cases, officials have raised doubts about the international comparability of data used by the *GFSR* in cross-country exercises.

28. To address these concerns, the *GFSR* should not only be responsive to data requests (as it already tries to be) but (i) publish the data underlying its charts, tables and empirical analysis in as granular form as possible (subject only to copyright restrictions due to contracts with commercial databases or confidential data received from authorities); (ii) ensure that any differences between concepts and definitions used in the *GFSR* and those used by national authorities are carefully documented (for example, banks' capital adequacy; see Landau, 2018). MCM should also share this data in full with IMF area departments before the *GFSR* draft itself is shared, to give bilateral surveillance teams ample time to review it.

29. ***Presentational improvements.*** Chapter 1 of the *GFSR* has lacked an opening narrative comparable to the first few pages of the "Recent Developments and Prospects" section of Chapter 1 in the *WEO*. In its place, there was a highly compressed description of how the Global Financial Stability Map (the "spidergram") had changed since the last *GFSR* issue. As explained by Jeanne (2018), there were methodological reasons to be skeptical of the spidergram: it mixed information at different frequencies and reflected judgment calls that were not made explicit. It was also something of a "black box" that often failed to convey a clear intuition for why a risk assessment had changed.

30. In April 2018, MCM replaced the spidergram with a global Financial Conditions Index (FCI) based on a smaller number of indicators that include interest rates, corporate, term and interbank spreads, equity prices and volatility, credit indicators, and house price growth. This index is used to forecast the distribution of growth at one-, two-, and three-year horizons, hence providing an assessment of "growth at risk" (GaR). As a summary description of how financial stability risks have evolved both in the short and medium term, this is an excellent, innovative addition to the *GFSR*.

31. At the same time, there is a risk that the introduction of the GaR methodology will be seen as merely replacing one black box by another, albeit a fancier and more rigorous one. To avoid this impression, it is essential to explain which financial indicators are driving changes in GaR. The discussion in the April 2018 *GFSR* paid more attention to the changes in the predicted growth distributions than the drivers of these changes. In the future, Chapter 1 may want to show not only the FCI but also the most relevant underlying data. It should also show the four subcomponents of the regional FCIs capturing the price of risk, leverage, foreign shocks and growth, as described in Annex 3.2 of the October 2017 *GFSR*, since these are in part driven by changes in exchange rates and commodity prices that appear to play no role in the global index but are presumably important for financial stability at the level of each region.

32. Once the *GFSR* has found a transparent and easily digestible way of describing changes in financial conditions at the beginning of Chapter 1, it would be important to maintain this constant over time. This will make it easier for readers to understand how financial conditions and stability risks evolve from one *GFSR* to another. If this is successful, MCM may even want to consider publishing quarterly updates of the opening sections of Chapter 1, to give a snapshot of financial conditions between two *GFSRs*, and comment on any financial stability threat that may have arisen since the previous *GFSR*.

33. Beyond the opening risk narrative, there may be room to make the presentational style of Chapter 1 less volatile. While there is value to adapting the structure of the chapter to fit the latest story, more continuity of structure would make Chapter 1 easier to absorb. The chapter may want to be a bit more selective in its use of charts. The chapter may also want to be clearer in naming and prioritizing what it sees as the main risks. Unlike Chapter 1 of the *WEO*, there is no designated section in which this occurs—the top risks have to be inferred from the executive summary of the *GFSR* and are typically scattered throughout the chapter.

B. Flagging Risks

34. Crises occur when a shock—for example, a drop in the oil price, a miscommunication by an advanced country central bank, or simply a loss of confidence—meets an underlying vulnerability. The timing of such shocks is impossible to predict. Furthermore, the crises that the *GFSR* tends to warn about are low probability events, and the *GFSR* tries to prod policymakers to take actions that may prevent such crises. Hence, it should not be judged on its predictive accuracy: events that the *GFSR* warned about may not have occurred because they were unlikely to begin with, or because they became less likely after the *GFSR* warned about them.

35. At the same time, any evaluation of the *GFSR* would be incomplete without saying something about its success in identifying relevant risks. Flagging risks is among principal aims of the *GFSR*, implicit in its executive summaries and in the structure and content of Chapter 1. The IMF's failure to warn about the possibility of a financial crisis in the U.S. and its international ramifications was one of the motivations for the broad reforms of IMF financial surveillance that have taken place since 2009, a portion of which are evaluated here. How can one evaluate the success of the *GFSR* in flagging risks without holding it to an impossible standard?

36. The answer given in this section is as follows:

- First, while it would be unreasonable to expect the *GFSR* to accurately predict the timing of a crisis event, it is reasonable to expect the *GFSR* to have warned about the possibility of such an event at some point—say, within a two- or three-year window. The failure to issue such a warning, conditional on the event occurring, is referred to as a "Type I error" in the remainder of this paper.
- Second, while the *GFSR* cannot be held responsible for the failure of an event to occur even though it warned about it—referred to below as a "Type II error," one can

legitimately ask the question whether the *GFSR* may have been warning excessively. Indeed, it is important to ask this question, because it encapsulates many of the complaints that country officials direct at the *GFSR*.[3] Although giving an answer is not straightforward, something can be learned in the attempt, as explained below.

***GFSR* risk warnings, 2013–17**

37. Unlike the *WEO*, the *GFSR* does not have a dedicated section in which the main "downside risks" to global financial stability are identified (as argued in the last section, it probably should). All of Chapter 1 of the *GFSR* is potentially devoted to describing vulnerabilities and risks. With some effort, however, it is possible to extract the "top concerns" of each *GFSR* based on Chapter 1 and the preceding executive summary. For the 2013–17 period, they were as follows:

(i) Risks related to sustained accommodative monetary policy/low interest rates, including:

- Corporate distress in either AEs or EMEs as a result of excessive debt accumulation (April 2013, April 2014, October 2014, April 2015, April 2017, October 2017).
- Banking distress in advanced countries, particularly the Euro Area, as a result of the inability to adapt its business model to the low rate environment, declining profitability and eventually eroding capital (October 2014, April 2016, October 2016, April 2017).
- For similar reasons, distress in the insurance sector in the Euro Area or other advanced countries (April 2015, April 2016, October 2016, April 2017).

(ii) A panic due to the poorly managed unwinding of expansionary monetary policies in the U.S., leading to leading dollar appreciation, capital outflows and a crisis in EMEs (October 2013, April 2014, October 2014, April 2015, October 2017).

(iii) An "illiquidity event" in the U.S. financial system triggered by a drop in equity and bond prices, a sudden change in expectations regarding U.S. monetary policy, and/or a run on a mutual fund or ETF, with potential international ramifications (October 2014, April 2015, October 2015, April 2016).

[3] In the words of one European official, "The DNA [of the *GFSR*] is that it must cry wolf. It cries wolf when there are no wolves and misses the bear." The quote is unfair, because the *GFSR* virtually never "cries wolf;" rather, it tries to identify what animal—wolf, bear, or snake—might be hiding in the bushes with some, possibly low, probability. This said, the official is right in the sense that the *GFSR* would have to take some blame if it repeats the same warning for several years and in the end a different animal emerges from the bushes.

(iv) A corporate debt crisis in China, leading to failures of non-bank financial vehicles and potentially banks (October 2013, October 2014, April 2015, October 2015, April 2016, October 2016, April 2017, October 2017).

(v) A corporate and or sovereign debt crisis afflicting EME commodity exporters, as commodity prices fall, or persistently remain low (April 2015, October 2015, April 2016).

38. More sporadically, the *GFSR* also warned about a number of additional risks, including: (i) a possible return of the Euro Area debt crisis (October 2013); (ii) banking sector problems in Japan in the event of a failure of Abenomics (October 2013); (iii) a crisis related to geopolitical risks such as the Ukraine conflict (April 2014, October 2014) or Middle East conflicts (October 2014); (iv) a renewed crisis in Greece (October 2015); (v) external funding risks of Japanese banks (October 2016); and (vi) policy uncertainty and particularly risk of protectionism (October 2016, April 2017).

"Type I errors"

39. Luckily—or perhaps because of the efforts of policymakers and surveillance organizations such as the IMF—no global or major regional financial crisis has occurred since 2013. This said, there were a number of "near-crisis events" that rattled financial markets and could have had systemic repercussions. They include:

(i) The "taper tantrum" triggered by the U.S. Federal Reserve communication in May 2013 which led to turbulence in emerging market bond and currency markets.

(ii) The financial stability implications of the commodity price downturn in 2014 and 2015, which led to major recessions in several emerging market countries, capital outflows, corporate distress, and loss of market access by some "frontier" borrowers;

(iii) The near-"Grexit" of July 2015, which could have triggered severe stress in the Euro Area, had it not been avoided at the last minute;

(iv) Financial instability in Chinese equity and currency markets in 2015, which led to a substantial rise in risk aversion affecting EMEs more generally, notwithstanding heavy intervention by the Chinese authorities;

(v) Sharp price drops in advanced equity markets in early 2016, triggered by weak economic data and worries that expansionary policies might not generate a sustained economic recovery;

(vi) The potential financial stability implications of the Brexit referendum of June 2016.

40. To what extent were any of these six events described as potential risks in preceding *GFSRs*, regardless of their timing? Strictly speaking, only one: the volatility in financial markets in

early 2016. The *GFSR* had repeatedly warned that asset price valuations were "stretched" and small losses in confidence could trigger a large correction.

41. In all other cases, the *GFSR* either failed to warn about the event before it occurred or did not discuss the financial stability implications in any depth. While the April *GFSR* 2013 notes that an eventual increase in U.S. interest rates would raise EM financing costs, the risk of financial turbulence triggered by an exit from easy monetary policy in the U.S. became a focus of the *GFSR* only after the May 2013 "taper tantrum" (see also Robinson, 2014). Similarly, the potentially serious corporate and sovereign distress in commodity exporting countries unleashed by a collapse in commodity prices became a major theme in the *GFSR* only after the collapse of oil prices in the second half of 2014. The financial stability threat posed by Grexit was mentioned in a *GFSR* only after the scare of near-Grexit of July 2015. The "possibility of British exit from the European Union" was mentioned in the overview section of the April 2016 *GFSR*, just prior to the referendum, but its potential financial stability implications were analyzed only in the October report. And the turbulence in the Chinese equity and currency markets were discussed, as a potential financial stability risk, only after this turbulence had happened.

42. A potential justification for the fact that the *GFSR* did not warn about most of the "near-crisis events" that occurred during 2013–17 is that these events may not, in fact, have been all that dangerous. In the end, only two—the May 2013 "taper tantrum," which triggered a large reversal of capital flows to EMEs, and the collapse in commodity prices, which contributed to capital outflows and severe recessions in a number of commodity-exporting countries—evolved into significant threats to financial stability. Maybe the *GFSR* was convinced that Greece and its Euro Area creditors would ultimately agree on a new program. Maybe it correctly guessed that a crash in the Chinese equity market or even a negative outcome of the Brexit referendum would not inflict sustained damage on global financial markets. However, there is a tension between this interpretation and the fact that the *GFSR* started discussing Grexit as soon as near-Grexit happened, Brexit as soon as the U.K. voted to leave the European Union, and advised China to remove incentives for leverage in equity markets immediately after equity markets had crashed. If Grexit is highly unlikely to happen and Brexit and Chinese equity markets are not a big deal, why worry about them after related events have happened?

43. Hence, the *GFSR* probably does deserve to be criticized for the fact that it missed most risk events listed at the outset. Indeed, one of these events—the collapse of commodity prices—justifies serious criticism. As implied by the attention that the subject received in subsequent *GFSRs*, the commodity price decline contributed to recessions and corporate distress in many commodity exporters, including Argentina, Brazil, Russia, Nigeria, and Venezuela. Furthermore, if there is one lesson to be drawn from hundreds of EME crises since the 1820s, it is that EMEs typically succumb to two types of external shocks: tighter global financial conditions and lower

commodity prices. The fact that the *GFSR* lavished attention on the first of these two potential triggers but ignored the second is therefore inexcusable.[4]

44. In contrast, the failure of the April 2013 *GFSR* to see the "taper tantrum" coming may be more readily excused. Although the potential repercussions of an actual or perceived withdrawal of U.S. monetary policy stimulus were not flagged as key risk in the April 2013 *GFSR*, Chapter 1 mentioned the fact that EME borrowing conditions were sensitive to a rise in U.S. interest rates, and Chapter 3 contained a box on "Financial stability risks associated with exit from [monetary policy]-plus policies." Hence, the failure to flag these risks did not reflect the fact that the *GFSR* authors were insensitive to the problems that a withdrawal of U.S. monetary policy stimulus might cause; rather, they thought that this withdrawal was still far off. With hindsight, they were right in the sense that "tapering" started much later than markets assumed in May of 2013. The fact that there was a taper tantrum at all reflected a miscommunication by the Federal Reserve Chairman—which was impossible to predict. This said, the *possibility* of such an adverse market reaction due to a poorly communicated or surprising withdrawal of U.S. monetary stimulus could have been raised, and it was in fact raised in the April 2013 EWE, discussed below.

45. Beyond the question of whether the *GFSR* ought to be blamed for missing specific risk events or not, it is important to consider whether the *GFSR* was too backward looking in the sense that it took a number of risks seriously only after they had become reality. The *GFSR*'s reaction to the "taper tantrum" offers clues about why this may have been the case. Consider Figure 2, taken from the October 2013 *GFSR*—the first after the taper tantrum.

46. The figure explains what might be described as the *GFSR*'s tendency to expect "the other shoe to drop." Essentially, the taper tantrum was interpreted as a near miss—in the words of the *GFSR*, as a "mini stress test"—as opposed to the "real deal," which would have been the adverse scenario described by the red line in the figure. The same may have been true of the other events that *GFSR* initially missed and that subsequently triggered *GFSR* risk warnings. These events were implicitly viewed as the first shoe, raising the question whether and when the second shoe might drop, and hence justifying a risk warning.

47. Is this an appropriate reaction to the realization of risky events? On the one hand, it seems silly to think that risks of the type of the taper tantrum are serially correlated over short horizons. The market made an expectations error. Having "reset its expectations" (October 2013

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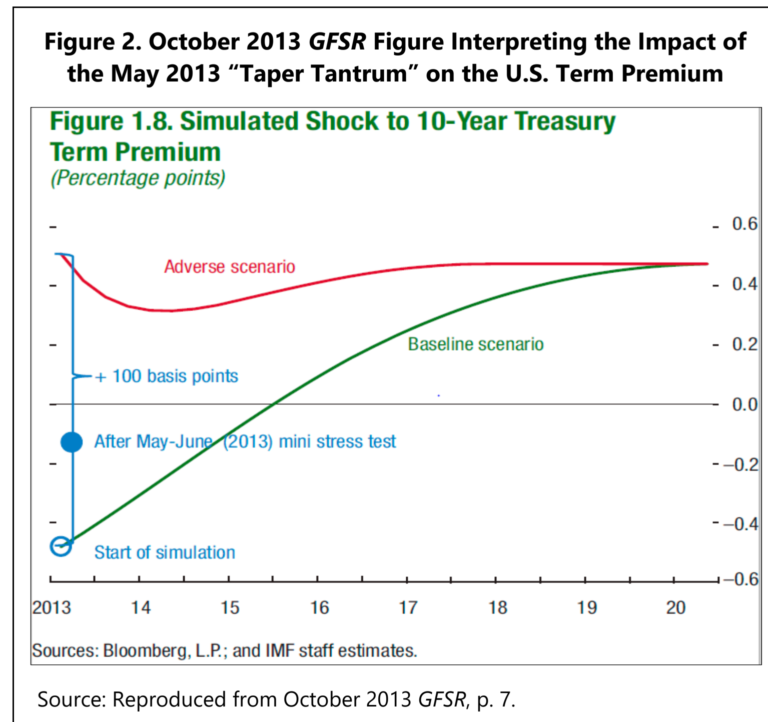
[4] The blame for this failure must be shared by the *WEO*, as none of the *WEOs* produced between the GFC and April 2015 listed a collapse of commodity prices among the key risks to the outlook for EMEs or the world economy at large. Hence, the failure of the *GFSR* to flag this risk cannot be blamed on poor communication between MCM and RES. If anything, it may reflect a communication problem *within* RES: downside risks to commodity prices—including supply-driven risks to oil prices—and their potential effects on commodity exporters were discussed in some detail in the "Special Features" sections of the April and October 2013 *WEOs*, but never registered as a key risk to the outlook.

GFSR, p. 3)—that is, having realized that the existence of an adverse scenario—why should it repeat this error in relatively short sequence?

Figure 2. October 2013 *GFSR* Figure Interpreting the Impact of the May 2013 "Taper Tantrum" on the U.S. Term Premium



Source: Reproduced from October 2013 *GFSR*, p. 7.

48. At the same time, there is an entirely reasonable interpretation for the tendency to warn after the fact. Suppose that the staff's threshold for making a warning is a 2 percent probability that a bad event might happen. Suppose that the perceived probability of the bad event is just 1 percent—not enough to raise a warning—whereas the true probability is 20 percent. Finally, suppose that, if the bad event happens, the probability that it will reoccur does in fact go down, from 20 percent to just 5 percent—still above the staff's reporting threshold. In that case, having observed the event, the staff would be right to issue a warning, even if it is unlikely that the event will reoccur. The mistake would not have been to warn after the fact, but not to warn initially.

49. To summarize: the *GFSR* committed several "Type I" errors in the period 2013–17. Fortunately, in most of these cases, the events that the *GFSR* failed to warn about did not lead to a major systemic disruption. There is one important exception, however: the failure to warn about the potential consequences of a sharp decline in commodity prices.

50. The *GFSR* also exhibited a tendency to warn about events that had just happened, making it look behind the curve. This tendency could well be justifiable, however: in effect, it amounts to an admission that a serious risk had been overlooked. If that risk continues to be relevant, warning after the fact is still the right thing to do. This said, it may be useful to devote some research (or bring to bear existing evidence) on the question of whether the realization of

risky events carries information that should lead one to predict similar events in the future and when this is not the case.

51. The GaR framework, which *GFSR* has now adopted in Chapter 1, could be seen as one way of answering this question for variables that are reflected in the FCI, by distinguishing between short forecast horizons (over which a tightening of financial conditions increases the probability of bad GDP events) and medium-term horizons (over which a tightening of financial conditions can lower the probability of bad events). It remains to be seen whether the framework will reduce the *GFSR*'s tendency to warn after the fact.

Did the *GFSR* warn excessively?

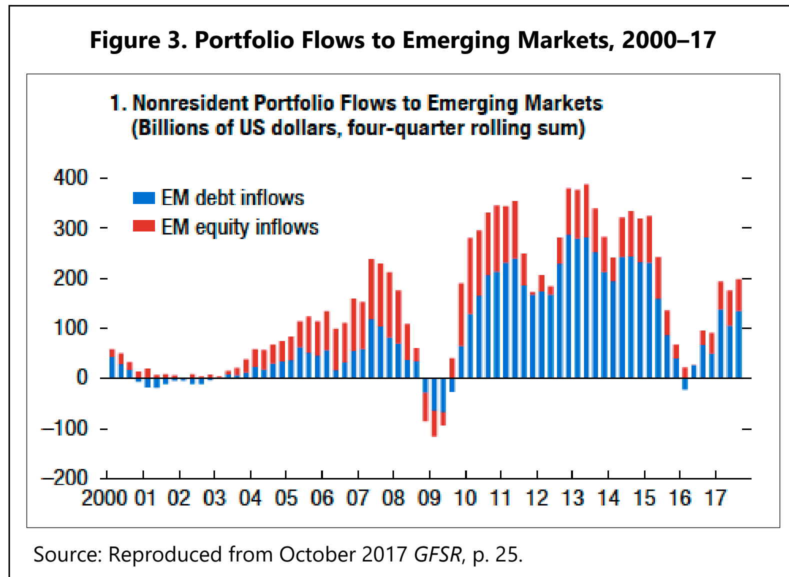
52. As argued at the outset, the fact the *GFSR* warned about a risk that did not come true should not be held against it, for two reasons: the risk may have been low in the first place and *GFSR* warnings may have contributed to avoiding that risk.

53. At the same time, there is a possibility that risk warnings can go too far. This would be the case if the risks that the *GFSR* was warning about were just too minor—in terms of probability, consequence or the product of the two, i.e., expected loss—to justify policy action. If one cannot hold the *GFSR* responsible for the fact that its risk warnings do not come true, is there any way to assess whether *GFSR* warnings were excessive in this sense?

54. One way to answer the question is to exploit the fact that *GFSR* risk warnings usually refer to both a trigger (shock) and an underlying vulnerability. While the trigger is typically low probability, the *GFSR* often takes strong views about the underlying vulnerability and the mechanisms that are expected to propagate and amplify a shock. Hence, one way of testing whether the *GFSR* exaggerated its warning is to identify cases in which a shock happened and to check whether this led to the consequences that the *GFSR* predicted. For example, if we observed a string of major corporate defaults in China that had been financed through non-bank financial intermediation, and nothing happened to the Chinese shadow banking sector or to the banks that sponsored it, we would know that the *GFSR* exaggerated its key warning with respect to China.

55. As it turns out, there was in fact an event during the 2013–17 evaluation period that could be regarded as a test of this kind. Triggered by a historic commodity price collapse that continued well into 2016 and was exacerbated by the China equity and currency instability in the summer of 2015, emerging markets suffered a "sudden stop" in capital inflows comparable to that of the GFC of 2008–09 (see Figure 3). Based on *GFSR* analysis conducted during 2014–15, one would have expected these shocks to cause havoc in EMEs with high corporate leverage and high foreign currency exposures. Furthermore, as the April 2014 *GFSR* argued in a thematic chapter, changes in the investor base and financial deepening had made local financial conditions more sensitive to reversals in capital flows. Yet, no crisis happened that would have been comparable, for example, with some of the emerging market crises triggered by the GFC, or by the sudden stops in capital flows of the late 1990s.

Figure 3. Portfolio Flows to Emerging Markets, 2000–17



Source: Reproduced from October 2017 *GFSR*, p. 25.

56. This resilience could be interpreted as implying that *GFSRs* in 2014 and 2015 exaggerated the vulnerability of EME crises. However, while the shocks described did not trigger outright debt distress (except for outliers such as Venezuela), they did lead to recessions in several EMEs and to stagnation in others, presumably reflecting some of the vulnerabilities that the *GFSR* had identified. Based on the information available, the warning that a large sudden stop in EME capital flows might well trigger corporate and/or sovereign debt crises in EMEs was, prima facie, reasonable. It reflected historical experience with emerging market crises, as well as solid analysis.

57. Although the *GFSR* may have made the right call in its warnings, it would be useful to better understand why no major EME crisis took place during 2015–16. Were EME vulnerabilities less severe than the *GFSR* had assumed? Were crises avoided because EME authorities put policies in place that either reduced vulnerabilities to capital outflows and commodity price shocks before they occurred, or mitigated their impact once they occurred? If the latter is true, were the authorities acting consistently with *GFSR* policy advice—for example, by increasing reserves and/or capital buffers—or were policies in play that the *GFSR* had overlooked? These questions could be explored in a future *GFSR* chapter or research paper, as they may carry lessons for future analysis of EMEs and for IMF financial surveillance more broadly.

III. Consistency and Focus of the *GFSR*, *WEO*, G20 Notes, and EWE

A. Consistency and Integration of the *GFSR* and the *WEO*

58. Conflicting messages between the *GFSR* and the *WEO* and poor communication between the *GFSR* and *WEO* teams had been an issue in previous evaluations of IMF surveillance (IEO, 2014). However, a comparison of *GFSRs* and *WEOs* published during 2013–17 and interviews with members of both teams indicate that this was not a significant problem during the evaluation period. For the time being, the IMF can declare victory in this respect: during the evaluation period,

its two best known flagship reports did, in fact, "speak with one voice"—or to use a perhaps better analogy, they sang different parts of the same composition, without obvious dissonances.

59. The consistency of messages in the *GFSR* and the *WEO* during this period is laudable particularly because there was a major opportunity for discord, namely, the fact that highly accommodative monetary policy—arguably necessary to propel the recovery in AEs and help highly indebted sovereigns, households and corporations deleverage—was also arguably a major factor in encouraging new indebtedness, inflating asset prices, and fueling potentially skittish capital flows, as documented and analyzed in many *GFSRs*. As a result, the *WEO*, which focuses mainly on baseline growth, might have been expected to take a far more benign view of monetary accommodation than the *GFSR*, whose job is to urge policymakers to prevent financial crises. However, this was not the case. The two publications appear to have agreed on *both* parts of the message: that accommodative monetary policies were necessary but also had potentially dangerous side effects, and that the latter needed to be vigorously addressed with additional instruments, including tighter bank regulation, bigger capital buffers, and macro-prudential supervision to prevent excessive credit growth.

60. On the side of the *GFSR*, there is a sense that this message is not just lip service. The *GFSR* frequently emphasized that more "economic risk taking" (meaning: investment) was desirable and indeed necessary, while (excessive) "financial risk taking" should be avoided. While the distinction between "economic" and "financial" sometimes feels a bit artificial (for example, higher investment may require higher credit growth, increased merger and acquisition activity, and so on), the *GFSR* offers considerable detail on what it means by excessive "financial risk taking," and how to mitigate it.

61. The *GFSR* and *WEO* also frequently cross-referenced each other and were generally consistent in the risks that they identified. Reflecting the division of labor between the two flagships, the *WEO* tended to describe a wide array of risks, without going into much detail, while the *GFSR* focused on risks to financial stability. However, the risks described by the *WEO* usually contained one or two risks related to financial stability, which were consistent with those described in the *GFSR*, and usually cross-referenced the *GFSR*. Conversely, the *GFSR* regularly cross-referenced the *WEO* when describing the macroeconomic risks that constituted one of the six dimensions of its Global Financial Stability Map.

62. The coordination exercise that produces this consistency was not costless. Staff members from both teams provide extensive comments on each other's products. Particularly, the *GFSR* typically goes through many rounds of revision. But whatever the cost, the mutually supportive process seems to have worked to produce two reports that are very different and yet consistent.

B. Global Prospects and Policy Challenges (G20 Notes)

63. "Global Prospects and Policy Challenges," also known as the G20 Notes, are essentially a *Reader's Digest* version of the *WEO*, a boiled down and updated summary for policymakers. They

are usually produced three times a year, ahead of the meetings of the G20 finance ministers and central bank governors and ahead of the G20 Leaders' meeting, and subsequently published.

64. Since the narrative, risk assessments and policy recommendations of the G20 Notes remain close to that of the *WEO*, they tend to inherit the consistency of the *WEO* with the *GFSR*. At the same time, the conciseness of the G20 Notes sometimes helps to sharpen the message. For example, the April 2013 G20 Note warned that capital inflows due to easy money in advanced countries could make EMEs vulnerable to a "sudden stop." While it did not in fact suggest that the risk of a sudden stop was imminent (the point is made under the rubric "medium term risks") an emerging market policymaker glancing at the Note would have gotten the message, whereas the *GFSR* made the same point in a box buried in a thematic chapter.

65. Overall, the G20 Note seems to be a good product for its purpose, with a clear division of labor relative to the other surveillance products.

C. Early Warning Exercise

66. The EWE is a confidential presentation and discussion led jointly by the IMF First Deputy Managing Director (FDMD) and the chair of the Financial Stability Board (FSB) Standing Committee on the Assessment of Vulnerabilities (SCAV) at the IMF Spring and Annual meetings. The purpose of the EWE, set up in 2009 in reaction to the GFC, is to identify systemic vulnerabilities of the world economy sufficiently in advance to allow time for corrective action, paying attention to linkages between different markets, sectors, and countries that may play a role in amplifying and propagating risks. The focus of the IMF's contribution is on tail risks—albeit tail risks that are considered realistic enough to trigger interest and a good discussion (see Robinson, 2014 for details).

67. The EWE differs from other IMF multilateral surveillance exercises in at least three respects. First, it is the only exercise conducted jointly with another institution, the FSB (although each institution makes its own presentation). Second, it is prepared, on the IMF side, by an ad hoc team led by an individual who operates outside the usual departmental and hierarchical structure of the IMF, is not subject to the usual interdepartmental review process, and reports directly to the FDMD. Third, the EWE is kept secret except for a briefing of the IMF Executive Board about a week ahead of the main presentation during the IMF Spring and Annual Meetings. Attendance at that presentation is limited to 2 participants for each of the 24 IMF constituencies, making it more exclusive than most other high-level presentations at the Spring and Annual Meetings. No written materials are distributed.

68. The EWE was reviewed with three main questions in mind. First, was the EWE's choice of topics and the depth of analysis aligned with its objectives? How did it compare with risk and vulnerability analysis in the *WEO* and the *GFSR*? Second, were the IMF and FSB contributions to the EWE complementary and well-integrated? Third, how successful was the EWE in managing the trade-off between confidentiality—essential to attract the interest of the highest level of

policymakers and facilitate a discussion among them—and impact, which requires dissemination of its messages? Based on a review of the "storyboards" of all EWEs presented during the evaluation period and interviews with the heads of the IMF EWE teams as well as several policymakers that had attended EWE presentations or report to policymakers that attended them, the answers are as follows.

69. On the first question, the answer is an almost unqualified "Yes." In general, the IMF's contribution to the EWE comes across as an "out of the box" exercise attempting to identify one or two key emerging vulnerabilities and analyze how, considering these vulnerabilities, shocks could propagate across geographies and sectors. The analytical standard is high, and the presentations used to illustrate the analysis are often imaginative and visually impressive. This usually makes the EWE presentation exciting to watch (as attendees attested), or even just to read (based on the "storyboard").

70. Between 2013 and April 2016, the topics of the EWE usually overlapped with topics that were also discussed in concurrent or subsequent *WEOs* and *GFSRs*. In several instances, the EWE succeeded in identifying or thinking through a risk before it was analyzed in the flagships. For example:

- The EWE warned of the dangers of "long-term stagnation" in advanced economies as early as 2012—well before Larry Summers coined the term "secular stagnation," and well before stagnation risks in advanced economies became a focus of the *WEO*.

- In April 2013, the EWE pointed to the risk of a mismanaged exit from easy monetary policy in the U.S. for EMEs (though it viewed this as a medium-term rather than short-term risk).

- In October 2013, the EWE warned about the consequences of a possible slowdown in China (the *WEO* began to do so six months later).

- In October 2014, the EWE examined the potential consequences of a crisis originating in the wealth management sector. While the *GFSR* had pointed to risks of this type since April 2014, only the 2015 *GFSRs* contain analyses of comparable depth.

- In April 2015, it pointed to the danger of a potential rise in protectionism in the U.S. triggered by a growing trade deficit.

71. More recently, the overlap between the IMF's contribution to the EWE and risks of the sort that would also be discussed in some detail in the *GFSR* and the *WEO* has declined. During October 2016–April 2018, EWEs focused on risks related to political developments, technology, fragmentation, and declines in trust. Hence, in recent years, the EWE has become an even more differentiated product and less "macrofinancial" in orientation. Given that politics and technology have recently created new challenges and vulnerabilities, this change in focus may well be appropriate, but it also raises the question whether the IMF's confidential messages on

macrofinancial risks are adequately communicated and sufficiently discussed by high-level policymakers.

72. With respect to the remaining two questions posed in paragraph 65, Robinson's (2014) findings continue to hold. Policymakers that do not participate in the EWE discussion in person rarely seem to be briefed on its contents. This implies that the channel through which the EWE can have impact is a narrow one, namely, to change the thinking of the top layer of policymakers that are present at the presentation.

73. Furthermore, IMF and FSB presentations, "while consistent, cannot be described as integrated" (Robinson, 2014); they continue to be very different in style and substance, with the FSB's much closer to the material that would be covered in the *BIS Quarterly Review* or in Chapter 1 of the *GFSR* than the IMF's. This makes the two presentations complementary in the sense that they do not overlap, but not in the sense that they feed off and enhance each other. Thus, the lack of integration may be a missed opportunity to take the full advantage of the comparative strengths of the two institutions by working more closely together.

74. The latter does not seem to reflect poor communication between the IMF and FSB; both teams report a collegial relationship, which includes several rounds of coordination. Rather, it appears to be a consequence of (i) a growing gap between the topics covered by the IMF and by the FSB, and (ii) differences in the IMF and FSB's EWE processes, respectively, which preclude a fully integrated product. While the IMF's EWE is prepared by an independent staff team as noted above, the FSB's presentation is based on the views and analysis of FSB members—in particular, the Analytical Group on Vulnerabilities, a sub-committee of the SCAV. It is also circulated to the entire SCAV on a no-objection basis prior to the presentation.

75. To see if these shortcomings can be addressed without undermining the present strengths of the EWE, it would be worth exploring three ideas.

76. First, it may be possible to aim for better integration of the two EWE teams, involving a joint brainstorming and production process. It may even be possible to have a single joint presentation, for example with alternating interventions by the FDMD and the Chair of the SCAV. However, such integration is unlikely to work without a close alignment of the mandate and governance structures of the two teams. This may only be possible if the FSB is prepared to give its team the same latitude and independence that IMF's EWE team currently enjoys, while still allowing it to continue drawing on the ideas and expertise of SCAV members. It is not clear if the governance structure of the FSB would allow this (see Cecchetti, 2018).

77. Second, the IMF could explore ways of closing the gap between the *GFSR/WEO* risk analysis (which focuses on macrofinancial risks but must be safe for publication) and the IMF contribution to the EWE, which may not address macrofinancial risks at all. One possibility could be to devote an additional confidential meeting (possibly organized jointly with the FSB and drawing also on the FSB's EWE presentation) specifically to macrofinancial tail risks. This could be

a Deputies' level meeting at the IMF Spring and Annual meetings, or perhaps an extension of the IMFC Deputies' meeting that takes place two to three weeks prior to the Spring or Annual meetings.

78. Third, the IMF and FSB could present the EWE to additional audiences. For example, the head of the IMF and FSB EWE teams could present the EWE to Deputies- or Director General-level audiences, followed by a discussion, in parallel to the main EWE presentation. In addition, the FDMD may want to give the full-length IMF EWE presentation to an audience consisting of IMF senior staff (mission chiefs and division chiefs) in the week after the Spring and Annual meetings.

79. When exploring such reforms—particularly any attempt to more closely integrate the IMF and FSB presentations—it is important to avoid undesirable unintended consequences. In tightly structured organizations like the IMF, there are few examples for products that are as intellectually curious and stimulating as the EWE. One of the reasons for this is that the IMF's EWE presentation is prepared by a team that is given considerable freedom and operates outside the usual reporting lines and review processes. If attempting to better integrate the IMF and FSB presentations introduces constraints that lead the EWE to lose its freshness and edginess, this would be too high a price.

IV. Alignment of Multilateral and Bilateral Financial Surveillance

80. The IMF undertakes surveillance of systemically important financial centers through multiple channels: semiannually through the Chapter 1 of the *GFSR*; annually in the context of Article IV consultations; and every five years through the Financial Sector Assessment Program (FSAP). The teams carrying out this surveillance pursue different objectives, face different incentives and generally have little overlap,[5] although they interact with each other by peer-reviewing each other's products.

81. This raises the question whether the analysis and policy recommendations undertaken through these exercises were consistent. To the extent that they offer different perspectives, can this be justified by differences in objectives and target audiences, or do they reflect disagreements and tensions that could undercut the effectiveness of IMF policy advice? In what follows, this

[5] MCM has two staff (one who lives in New York and one in London) who are members of the *GFSR* team that prepares Chapter 1 and who participate in Article IV missions. In addition, Article IV missions may include MCM staff on a case-by-case basis, but these would typically be from specialized divisions in MCM rather than members of the *GFSR* Chapter 1 team. FSAPs are conducted by ad hoc teams led by MCM. For background on FSAPs, see Caprio (2018).

question is answered with respect to the *GFSR* and the staff reports for the Article IV consultations with the U.S. and the Euro Area, the two financial centers that received most coverage in the *GFSR*.[6]

A. United States

82. A comparison of the relevant sections of U.S. Article IV staff reports and Selected Issues Papers (SIPs) with concurrent *GFSRs* gives the impression that these are independent products, written by two strong teams that do not feel that they need each other. Cross-citations are very rare. Like Chapter 1 of the *GFSR*, financial sector surveillance in U.S. Article IV staff reports is often backed by boxes and SIPs or Working Papers, but these are typically produced by the Article IV mission members themselves, rather than by MCM or in co-authoring relationships.

83. The emphasis of the two reports is also quite different. While the *GFSR* focuses on one or two risk narratives that are explored in detail and tend to be repeated and deepened in successive *GFSRs*, Article IV staff reports cover a broader spectrum of topics—usually more briefly—and devote more space to policy advice. This includes advice on regulation and on the structure of markets and institutions that has longer-term significance and may not be related to current vulnerabilities. In the *GFSR*, in contrast, policy advice is typically dispensed only in relation to the vulnerability that has just been analyzed.

84. At the same time, however, Article IV staff reports and the *GFSR* were consistent in the sense that they emphasized similar risks to U.S. financial stability—growing corporate leverage, the growing size of the leveraged loan market, potential redemption risks associated with mutual funds and ETFs, growing risk-taking in the life insurance sector—and gave consistent policy advice on how to address these risks. Both the *GFSR* and Article IV staff reports emphasized the need to close gaps in the U.S. macro-prudential framework, better regulate the asset management industries and the insurance sector and develop stress tests for non-bank financial intermediaries.

85. The philosophy of the two teams with regards to the relationship between monetary policy and financial stability was also similar. The 2015 U.S. Article IV staff report puts it as follows: "At this stage, policy rates should not be used in an effort to either reduce leverage or dampen financial stability risks. Instead, efforts should be targeted toward strengthening the macroprudential framework, developing regulatory tools, and addressing gaps in regulation and supervision" (IMF, 2015a). A few months later, a Board paper co-written by MCM, RES, and the Strategy, Policy, and Review Department (SPR) reaches much the same conclusion (IMF, 2015b), which is also in line with the treatment of the subject in the *GFSR* (see Section III above).

[6] Apart from the U.S. and the Euro Area, the *GFSR* also regularly covers the Chinese financial system. Many *GFSRs*, but not all, also discuss Japan. Other financial centers are covered more sporadically, usually in the context of cross-sectional analysis. For example, U.K. banks and insurance companies are regularly mentioned, but typically in the context of sections on international banking or insurance problems, not in the context of U.K. financial system risks.

86. In rare cases, however, there were differences between the two reports that appear to have reflected genuine disagreements. Two examples are:

- The April 2014, October 2014, and April 2015 *GFSRs* point, with increasing urgency, to weakening underwriting standards in the U.S., as illustrated by the fast growth of "covenant lite" loans. While these loans were also mentioned in the 2013 and 2014 Article IV staff reports, they are given less importance, and the subject was no longer discussed in the 2015 or subsequent Article IV staff reports.

- The main U.S.-related theme of the April 2017 *GFSR* was the financial stability risk arising from possible corporate tax reform, which the *GFSR* feared could lead to higher "financial risk-taking" in the U.S. and/or expose highly leveraged corporations to higher interest rates. This theme is not mentioned in the 2017 Article IV staff report.

In both instances, these differences were deliberate. The Article IV team believed that the *GFSR* was overstating these risks.

87. To conclude, notwithstanding significant differences in substance and style, the *GFSR* and the U.S. Article IV staff reports generally offered consistent analysis and policy recommendations. In a few instances, the two teams had different views, which would have been noticeable to an informed reader. However, these did not rise to the level of outright contradictions.

B. Euro Area

88. The narratives of the *GFSR* and bilateral Euro Area financial surveillance were more closely aligned during the evaluation period than those of the *GFSR* and bilateral U.S. financial surveillance. During 2013–14, the main emphasis of both reports was on addressing continuing financial fragmentation, by credibly assessing bank asset quality, rebuilding capital buffers, reducing corporate debt overhang, and resolving unviable institutions. Beginning in April 2014 in the *GFSR* and in 2015 in the Euro Area Policies Article IV documents, the focus turned to NPLs. Both sets of documents argued that NPL disposal would raise credit growth and advised Euro Area authorities to adopt a much more aggressive strategy to reduce NPLs, including through regulatory measures, in part because they initially shared the view that fast NPL disposal would free up regulatory capital.[7] The close alignment between the IMF's European Department and MCM on this topic is also visible in an in-depth September 2015 Staff Discussion Note on the question of how to reduce NPLs, co-authored with LEG (SDN/15/19).

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[7] On policy recommendations, see pp. 24-25 in the April 2015 *GFSR*; p. 37 in the April 2016 *GFSR*; pp. 22-24 of the Euro Area Policies 2015 Article IV Consultation Staff Report (IMF Country Report 15/204); and pp. 26-29 of the Euro Area Policies 2016 Article IV Consultation Staff Report (IMF Country Report 16/219). With respect to the estimated impact of NPL disposal on bank capital, see Box 3, p. 24 in IMF Country Report 15/204; Annex III in the underlying SIP (IMF Country Report 15/205, pp. 85-86); and Box 1.3, pp. 34-35 in the October 2015 *GFSR*.

89. The *GFSR* and Article IV staff reports were also consistent in their views on European banking union, advocating a common deposit insurance and the use of the European Stability Mechanism as a common backstop. They also shared a somewhat ambivalent view on the constraints imposed by EU state-aid rules and the Bank Recovery and Resolution Directive (BRRD). In the April 2016 *GFSR*, the BRRD is referred to as "an important step forward" which "should be implemented carefully, as public support may still be needed in a crisis[,]" (IMF, 2016a) while the Euro Area Policies 2016 Article IV Staff Report states that "in systemic cases where state intervention may be warranted, EU State Aid rules should be exercised flexibly as permitted" (IMF, 2016b). Capital markets union and macro-prudential policies are also treated consistently in the *GFSR* and Article IV staff reports.

90. Euro Area Policies Article IV staff reports and SIPs cited the *GFSR* much more frequently than their U.S. counterparts (namely, nine times in the 2013–17 period, compared to just three).

91. Notwithstanding this generally close alignment, a few differences between the *GFSR* and the Article IV staff reports are worth noting. The first two go to the credit of the *GFSR* during the evaluation period, the third less so.

- On two occasions, key Euro Area themes were flagged and analyzed in some detail in the *GFSR* before they became the focus of bilateral surveillance. The NPL theme was put on the map by the *GFSR* in April 2014 but became a focus of the Article IV consultation only in 2015. Stability risks arising from the Euro Area insurance sector was covered by the *GFSR* in April 2015, April 2016, and October 2016.

- The *GFSR* was more careful in qualifying the claim that "speedy disposal" of NPLs would free up capital in Euro Area banks.[8]

- As already mentioned, regulatory treatment of sovereign exposures of banks was not mentioned at all in the *GFSR* during the evaluation period—in spite of a detailed discussion in two analytical chapters in 2012—whereas the 2016 Article IV staff report broaches the topic, albeit briefly.

V. Conclusions and Recommendations

92. This paper seeks to evaluate IMF multilateral financial surveillance during the 2013–17 period along five dimensions: *GFSR* vulnerability analysis, the *GFSR*'s risk warnings, consistency of the *GFSR* with the *WEO* and G20 Notes, the Early Warning Exercise (EWE), and consistency of *GFSR* with bilateral financial surveillance of the U.S. and the Euro Area.

[8] This claim is made only in a box in the October 2015 *GFSR*, which also makes its limitations reasonably transparent. Furthermore, as noted above, the claim is qualified—and effectively rescinded—in the October 2016 *GFSR* (pp. 15-17).

93. The main finding is that IMF multilateral financial surveillance has come a long way since the crisis and is generally in good shape, with room for improvement in specific areas.

(i) The *GFSR*'s vulnerability analysis during the evaluation period was generally very good: comprehensive, compelling, and empirically well-grounded. With few exceptions, so was its policy advice; and the standard of the analytical chapters was generally very high. There is nonetheless room for improvement in three areas:

- Ensuring that all Chapter 1 narratives are properly backed analytically and empirically, to avoid overstating concerns or giving the wrong policy recommendation;
- Improving transparency of data and methods, particularly in cases when data sources and definitions may differ from those used by the national authorities;
- Improving the readability of Chapter 1, which lacked a clear summary of how financial conditions changed over the prior 6-12 months and how this affected the *GFSRs* stability assessment, and which can overwhelm the reader with a frequently changing structure and an overabundance of complicated charts.

(ii) Of six "near-crisis" events that occurred during 2013–17, the *GFSR* discussed only one in any depth as a financial stability risk ahead of time. Fortunately, most of these events did not have severe consequences (the 2014 collapse of commodity prices being the main exception).

(iii) Risk and vulnerability analyses in the *GFSR* and *WEO* were generally consistent. The *GFSR* and *WEO* frequently cited and played off each other during the evaluation period, and communication between the two teams appears to have been good.

(iv) The IMF's contribution to the EWE has generally been stimulating, often raising risks and policy challenges long before they were discussed in the *WEO* and *GFSR* and the broader public. Nonetheless, the EWE is not ideal in two respects: (i) while not inconsistent, IMF and FSB contributions to the EWE are not well integrated; and (ii) the EWE fails to reach policymakers except for those that are in the room during the EWE presentation.

(v) In spite of being produced by independent teams and differences in emphasis, the messages transmitted by IMF bilateral and multilateral financial surveillance of the U.S. and the Euro Area were generally consistent. In several cases, *GFSR* narratives and analysis appear to have influenced bilateral surveillance reports (the opposite influence is less apparent).

94. On the basis of these findings, the main recommendations of this paper are as follows:

(i) Chapter 1 and the analytical chapters of the *GFSR* should be more closely aligned to ensure that key claims and policy recommendations in Chapter 1 are backed analytically.

Alternatively, the main narratives of Chapter 1 should be either fully backed within the confines of the chapter, backed by research papers, or presented in a more tentative way.

(ii) The recent decision to limit the number of analytical chapters to one per issue is a step in the wrong direction, since these chapters are one of the most appreciated contributions of the *GFSR*. Concise, easily accessible communication is important, but this objective can also be achieved through non-technical summaries.

(iii) To the extent possible, the data and analysis used in *GFSR* chapters should be published, with a set of detailed notes that explain data sources and definitions (particularly when these differ from those used by national authorities). MCM should share this data with IMF area departments before the *GFSR* draft itself is shared, to give bilateral surveillance teams ample time to review it.

(iv) Chapter 1 of the *GFSR* would benefit from an opening section which summarizes the most relevant developments and new information since the publication of the prior *GFSR*. The replacement of the Global Financial Stability Map by the Financial Conditions Index (FCI) and a "growth at risk" framework is an important and welcome innovation. However, unless the chapter gives a clear sense of what is driving changes in the FCI, there is a risk that the new framework will be seen as a "black box." The chapter also needs to say how financial conditions are changing at the level of the major financial centers and regions rather than just refer to the components of the global FCI.

(v) A more stable narrative structure in Chapter 1 should be considered. This would make it easier to understand how vulnerabilities and risks are evolving over time. Chapter 1 may also want to be somewhat more selective in its use of charts.

(vi) Care should be taken to maintain close communication and the current division of labor between the *WEO* and the *GFSR*, which finally seems to be working well.

(vii) To further improve the EWE, the IMF and FSB should consider closer integration of their respective teams. This would require giving the FSB team a similarly independent role within the governance structure of the FSB as the IMF team currently enjoys (and should continue to enjoy) within the structure of the IMF staff. To improve EWE dissemination, the IMF and the FSB should consider presenting the EWE to additional audiences, such as a deputies or Director General-level meeting.

(viii) Occasional disagreements between Article IV and *GFSR* teams may be an unavoidable—and to some extent desirable—consequence of putting two strong teams to work on the same topic. This said, an obvious approach to create greater opportunity for cross-fertilization would be to increase the overlap between the two teams, for example, by regularly including members of Article IV teams in the *GFSR* missions to their respective regions.

ANNEX 1. WHAT THE *GFSR* WAS WRITING ABOUT, 2013–17

Financial stability implications of low interest rates

1. Analysis and policy recommendations focusing on stability risks arising from highly accommodative monetary policies are a recurring feature of *GFSRs* during the 2013–17 evaluation period—indeed, they significantly predate this period. The possibility that easy monetary conditions will lead to rising leverage that might at some point become excessive is mentioned as early as in the April 2009 *GFSR*, and is regularly repeated in subsequent *GFSRs*. The possibility that easy money in advanced countries might induce asset price bubbles in either emerging market economies or advanced countries themselves is first analyzed in the April 2010 *GFSR*; the risk of credit bubbles in the October 2011 *GFSR*.

2. Within the evaluation period, the April 2013 *GFSR* is the first to contain an extensive analysis of the rising stability risks of accommodative monetary policy in Chapter 1 and a dedicated thematic chapter, pointing to consequences for asset valuations; corporate leverage; mispricing of credit risk; and risk taking by banks, pension funds and insurance companies. Analyses of this type are regularly repeated in subsequent *GFSRs*, with the tone of the analysis gradually changing, from warnings about developments that might happen to changes that are happening or have already happened. Excessive financial risk taking is the main theme of the October 2014 *GFSR*.

3. Beginning in 2015, a new theme emerges: the impact of persistent low interest rates on the profitability—and potentially stability—of banks, insurance companies and pension funds. At around the same time, the focus pivots from monetary policy to structural factors as the "culprit" for persistently low interest rates. Building on an extensive box on the *Impact of Low and Negative Interest Rates on Banks* in the April 2016 *GFSR*, the implications of "low for long"—now referring to both interest rates and growth rates—were the main theme of Chapter 1 in the October 2016 *GFSR*, followed by an extensive thematic chapter investigating the consequences of low growth and low interest rates on financial intermediation and financial services (banks, insurance, pensions, and market finance).

Banking challenges

4. Global or regional (U.S., Euro Area, Japan, emerging market) banking challenges are discussed in virtually every *GFSR* during the evaluation period. *GFSRs* in 2013 and 2014 focus on cross-regional comparisons of leverage, asset quality, profitability and funding models, pointing to the relative weaknesses of Euro Area banks with respect to leverage and profitability, partly as a result of euro crisis legacies. Thematic chapters explore changes in bank funding patterns (October 2013) and the impact of crisis legacies and new regulation on profitability and bank business models (October 2014). An excellent thematic chapter in the April 2015 report describes the shift away from cross-border activities of international banks towards more locally based lending and funding and explores its stability implication for both home and host countries.

5. Low bank profitability is a recurring theme of *GFSR* analysis devoted to banking, but the causes to which low profitability is attributed gradually shift, from legacy problems and the impact of new regulation to persistently low policy interest rates, with growing regional disparities. By 2016, the *GFSRs* are increasingly concerned that low profitability and low bank valuations could become a source of systemic risk. Structural challenges of banks, particularly in the Euro Area, continue to be a focus of *GFSRs* until now.

Shadow banking and market liquidity risks

6. Risks arising from the growing importance of non-bank financial intermediaries in both advanced countries and EMEs such as China, and related liquidity risks, are covered extensively in Chapter 1 of the *GFSR* beginning in April 2013. They are also analyzed in a series of ambitious thematic chapters in the October 2014, April 2015, and October 2015 *GFSRs*.

7. *GFSRs* during this period grapple with several interrelated themes. First, structural changes that are likely to lead to lower market liquidity in times of risk, including reduced market marking activities of banks, reduced dealer inventories, tighter matching of liabilities and assets by pension funds and insurance companies, and a shift of portfolio holdings toward benchmark and indexed instruments, which leaves other instruments less liquid. Second, the growing share of corporate bonds and syndicated loans held directly or indirectly by mutual funds and ETFs in credit intermediation, whose shares can be redeemed at any time, given rise to "run risk" (particularly since a large portion of these shares is held by retail investors). Third, increasing concentration—both in the sense of concentrated holdings of individual securities, and concentrated decision making within asset management firms. Fourth, the rise of automated trading.

8. Successive *GFSRs* argue that for these reasons, the potential for runs originating in the shadow banking sector has both grown and could have a large systemic impact. *GFSRs* also contain increasingly ambitious (and often cataclysmic) simulations of the potential impact of a liquidity shock in advanced markets, culminating in an attempt in the October 2015 *GFSR* to estimate the impact on global growth using a dynamic macrofinancial model.

Vulnerabilities of insurance companies and pension funds

9. Vulnerabilities in the insurance and pension fund industries are discussed in several *GFSRs*, beginning in April 2013, albeit with less frequency and detail as the banking sector or the asset management industry. *GFSRs* point to declining interest margins pushing insurers to riskier investments; risks resulting from the interaction of persistent lower interest rates with duration mismatch (shorter assets than liabilities) or interest-guaranteed life insurance, exposing insurers to insolvency when interest rates fall; and run risk associated with early cancellation policies.

10. The April 2015 *GFSR* focuses on European life insurers, which suffer from several of these problems as well as low profitability, leading to rising distress risk particularly among mid-size insurers. Links between banks and insurers and hence the potential for a spread of a crisis in the

insurance sector are discussed. A thematic chapter in the April 2016 *GFSR* documents the insurance sector's increasing contribution to systemic risk, and its reduced ability to act countercyclically, as exposures have become more correlated with those of other investors. The October 2016 *GFSR* reports on the threat posed by protracted low rates for the solvency of life insurers and pension funds; the October 2017 *GFSR* reports on actions taken by life insurers in the face of these challenges, allowing them to raise profitability but also exposing them to market and credit risk.

Euro Area crisis legacies and vulnerabilities

11. In addition to the situation of life insurers, successive *GFSRs* focus on banking sector problems—particularly high levels of NPLs and to interconnections between sovereigns and banks—as the main risk to financial stability in the Euro Area. Reform of the Euro Area financial architecture is occasionally discussed, along conventional lines, which focuses on completing banking union, particularly through the creation of European deposit insurance. In contrast, and somewhat surprisingly, the closely related debate on whether and how to regulate sovereign exposures of banks is not discussed.

12. Following the reduction of acute risks in the second half of 2012, *GFSRs* initially worry about continuing structural weaknesses—the sovereign-bank nexus, financial fragmentation, lower capital, and poor asset quality—that could trigger a relapse if confidence dissipates or growth does not recover. Beginning in April 2014, *GFSR* interest turns to NPLs as a contributing factor—along with weak credit demand—to continuing negative or flat credit growth. A number of policy recommendations are offered on how to accelerate bad loan resolution. Finally, in 2016 the focus shifts to low profitability of European banks, due in part to continuing high NPLs but also for other reasons—including "overbanking" and the flattening of the term structure affecting all banks. In addition to reducing the scope for new lending without depleting the capital base, low profitability is identified as a stability concern as it makes it hard to raise capital both externally and through retained earnings.

Emerging market vulnerabilities

13. For the first three years of the evaluation period, *GFSR* analysis of financial systems in emerging markets alternates between vulnerabilities resulting from capital inflows, credit booms and changes in the local investor base (April 2013, October 2014) and policy advice on how to manage market turbulence due to "taper tantrums" (October 2013, April 2014), commodity price declines (April 2015, October 2015), or the combination of lower growth, tighter external financing conditions, and continued low commodity prices (April 2016). Rising vulnerabilities in EMEs are analyzed in several thematic chapters, dedicated to the implications of changes in the investor base and financial deepening in emerging markets (April 2014) and rising corporate leverage (October 2015). The conclusion from these analyses is that exchange rates, local financial conditions and corporate credit in EMEs have become more sensitive to changes in global financial conditions, exposing EMEs to a reversal in capital flows.

14. By mid-2015, successive shocks did in fact produce a collapse in portfolio inflows, recessions and corporate stress in many EMEs, but not outright debt crises (with a few exceptions, such as Venezuela). With external conditions improving again since the Spring of 2016 (firmer commodity prices, higher risk appetite and gradually higher growth expectations in advanced countries) the October 2016 and April 2017 *GFSRs* focus on how to make the best of the resulting opportunity for a "smooth deleveraging," but also highlight new risks (including protectionism). The October 2017 *GFSR* comes full circle, focusing on the return of capital flows to EMEs since mid-2016.

Corporate leverage and shadow banking in China

15. *GFSRs* pay significant attention to emerging stability risks in China, focusing on rising corporate debt of state-owned enterprises; the role of non-bank credit in fueling this debt; close links, through both credit and funding, between the banking and shadow banking systems; and the dependence of many financial institutions on the wholesale (repo) market. Risks of rises in NPLs are seen particularly in the real estate sector and in heavy industries suffering from overcapacity. Rising contagion risks from financial instability in China to other emerging market countries and ultimately advanced economies are flagged in the October 2014 and October 2015 *GFSRs*.

16. Policy advice initially focuses on the need to better regulate and supervise non-bank credit, improve disclosure, remove implicit guarantees, strengthen capital buffers of non-bank financial intermediaries and establish formal deposit insurance. Equity market regulation also receives some attention, but only after the 2015 equity market turbulence. The April 2016 *GFSR* called for a comprehensive plan to address corporate debt overhang and better coordination and information sharing across regulatory bodies, a line repeated in subsequent *GFSRs*. Recent *GFSRs* give the authorities credit for slowing the growth in banks' supply of shadow credit but call for broader reforms that mitigate the economic and financial stability impact of lower credit growth, including strengthening capital of weaker banks and strengthening risk management.

ANNEX 2. PRIVATE SECTOR ECONOMISTS' VIEWS ON THE *GFSR*

In June 2018, the following questions were sent to 14 economists working for private financial institutions with global interests (major investment banks, hedge funds and other asset management firms): *Do you (and other economists working in the private sector that you are aware of) ever read the GFSR? If so, which sections/chapters do your read? What do you think of it?* Ten responses were received, which are reproduced below with minor editing.

Respondent 1. I and people in the private sector tend to read it occasionally. Some boxes tend to catch people's attention. I remember a few on European banks capitalization for example that were quite important…. The document as a whole nobody reads, but there are often a few hidden gems here and there that people look out for.

Respondent 2. I read the *GFSR* and the *WEO* front to back usually. Bit worried that the *GFSR* is becoming more model based (black box). Obviously new leadership. Most people I know at least are aware of both *WEO* and *GFSR* and would read bits.

Respondent 3. Yes, I/we follow the *GFSR*. We are interested in any signs of risks (bubble in the private sector, excess credit, leverage—for example we were really interested in the latest one). I also appreciate the deep dive into banking as well as non-banking sector; international comparisons are especially useful.

Respondent 4. Yes, I always skim it as I also do with the *WEO* and the flagship reports of the World Bank, BIS, etc.

I tend to look mostly at the empirical evidence in the charts and tables, and there mostly on topics relating to emerging markets (my area) or global credit markets. Other topics like developed market banks, housing markets etc. might be of lesser interest to me, but that is obviously specific to my own area. I generally like the depth of the work which—though maybe not as high as top-notch academic work—often provides data that is not easy to obtain unless one has the resources and access of the IMF.

Respondent 5. The truth is that I don't read it much. The summary chapter is too dense—by comparison, the *WEO* is much better—and the analytical chapters have irregular quality. There is also no "signature" tables/database that make it a must read, differently from the *WEO* and the Fiscal Monitor. So, it is the third IMF flagship publication in the list after these two for me.

In addition, the *GFSR* has a clear bias, in my view, towards playing up the downside risks. I can understand why, but I would make it more balanced. It would make it more informative and would give less of a sense that they are trying to get the next Financial Times headline.

Respondent 6. It's read quite a bit, mainly when a topic is not well understood already. Their comparative advantage is when the topic is financial but with macro interlinkages. That is what makes it different than BIS which is very good on financial risks.

Respondent 7. No, most people in the markets do not read the *GFSR*. The press conferences and summaries are a missed opportunity because they lack punch and media amplification.

My sense is that the *GFSR* fails to be a true global financial stability monitor in that it covers the health of regulated institutions and financial market vulnerabilities only cursorily and when it matters without bite. For example, China has been dealt with little and always given a passing grade. The leverage cycle there is a ticking global bomb that requires more honest truth telling. Perhaps I am a bit unfair because I think on European banks the *GFSR* has been candid and direct.

The problem of Chapter 1 is that it risks being out of date given production times. So, a shorter conjunctural commentary and more thematic (BUT SHORTER) analytical chapters that have a longer shelf life would be more useful. Another area that should be emphasized more in my view is the global liquidity plumbing.

Respondent 8. I read it, but most private sector economists don't. The stuff on non-financial corporate debt has been really useful, and the IMF has been a leader in warning about the debt bonanza we went on last year. I think most private sector economists have access to the IIF's capital flows data though, and there's overlap between the *GFSR* and that, with the latter tending to be more granular. Also, overlap between the *GFSR* and BIS research.

Respondent 9. Yes, we/I do read it, but really only the focus chapters and some boxes. The market overview chapter is much less relevant. I think the financial stability implication of emerging market corporate leverage and the piece on the asset management industry relative to stability risk were good pieces. I am not aware of the *GFSR* actually predicting anything except highlighting vulnerabilities and digging more deeply into issues similar to the BIS pieces.

Respondent 10. I am a big fan of the *GFSR* and I think particularly through the crisis period, it was both well-read and influential—especially Chapter 1, but often Chapters 2 or 3 as well depending on the issue. The work they did on European banks was particularly good, but I also appreciated their work on debt, risks in market liquidity/asset management and on emerging markets. For me, Chapter 1 was must read. Chapters 2 and 3 were more ad hoc depending on the topics of the day. [I think that the *GFSR*] is atypically hard hitting for the Fund.

ANNEX 3. CHAPTER 1 OF THE *GFSR*: FROM DEVELOPMENT TO PUBLICATION[1]

1. This annex examines the process through which Chapter 1 of the *GFSR* is developed and drafted to assess its contribution to surveillance. IMF staff see multilateral surveillance as a "hybrid" product that serves to inject market views into surveillance, different in nature from Article IV bilateral surveillance. The input is derived from interviews of market participants and publicly available information. However, as casual reading shows, this information is intensively analyzed, digested and processed to produce sophisticated presentations and policy messages.

2. MCM is responsible for drafting this chapter in consultation with other departments, with periodic direction given by the FDMD. RES and SPR help ensure consistency with the *World Economic Outlook (WEO)*, but they do not sign off on the document as SPR does for Article IV staff reports. In the context of a multilateral framework, there is also no ongoing relationship with a member country, which provides greater freedom to identify and analyze risks. Multilateral surveillance can therefore raise issues that can later be developed and elaborated in bilateral surveillance through the Article IV process, as was the case, for example, on NPLs and other banking issues in the Euro Area.

3. The elaboration of Chapter 1 is a "bottom up" process. The process starts with missions organized six months in advance to meet private market participants and, to a lesser extent, public authorities. At this early stage, staff is in a listening mode, trying to identify the biggest threats to financial stability for the next 6 to 18 months. Based on these consultations, MCM develops the main topics and messages of the chapter; MCM is given a lot of freedom in setting the agenda and picking up the topics it judges appropriate and relevant. An outline is prepared and then discussed and approved by IMF management after consultation with other departments. Other departments have a short period (two to three days) to look at the outline prior to the discussion meeting. A second round of external consultations takes place in parallel to writing a draft chapter that is again reviewed by departments with a turnaround of five days.

4. There is merit in this approach, provided that MCM is able to identify from amongst market concerns issues that deserve policymakers' attention and response, and provided that the internal review process is robust. The effectiveness of the review process depends on (i) MCM's ability to organize and trigger interdepartmental debate at an early stage; and (ii) the ability of other departments to provide suggestions on the final draft in a very short period of time.

5. MCM develops its own set of numbers to produce Chapter 1 and may use data that is different from, or at times even inconsistent with, that used for bilateral surveillance. Data come mostly from public sources, including firm-specific financial accounts. *GFSR* teams do not have access to the confidential supervisory sources that are sometimes available to FSAP teams. In effect, the Fund conducts financial surveillance with separate streams of numbers with limited

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[1] Prepared by Jean-Pierre Landau.

interconnections or systematic and effective cross-checking. During the Chapter 1 review process, other departments generally concentrate on issues of substance. They might point to some numbers that raise questions, but they do not review the whole data process or check for overall consistency with their own numbers. This contrasts with the *WEO* process, where numbers and forecasts initially come from area department desk economists and are subsequently reconciled with projections derived from overall macroeconomic models.

6. The *GFSR* relies on in-house methods for processing and interpreting data. Readers are presented with extensive use of graphs, correlations and other analytical tools to support the diagnosis and recommendations. Indeed, the combination of public data and sophisticated analysis is what makes Chapter 1 interesting and thought-provoking. For instance, in assessing banks' capital needs, the *GFSR* takes a market perspective that is different from the pure supervisory perspective, allowing more pessimistic assumptions on loss/recovery rates and asset quality. In interviews, the *GFSR* team pointed out that those assumptions often prove to be more realistic than conventions used by supervisors.

7. There is no rule which stipulates that the approach, data, and methods should be the same, or even fully compatible with each other, across different products and processes. On the contrary, a diversity of perspectives may contribute to enriching the content of surveillance, as long as the different perspectives do not yield contradictory messages that confuse authorities. In fact, over time the analyses and recommendations developed in the *GFSR* and Article IV consultation staff reports have typically converged. It may be seen as healthy that one element of surveillance (bilateral) involves close interactions and exchanges with the authorities, while the other element (multilateral) is developed independently.

8. However, it is not always easy for readers and policymakers to understand and evaluate the evidence that the IMF uses to reach its conclusions in Chapter 1. The IMF uses microeconomic data to come up with a macroeconomic judgment on financial risks for this chapter. While this process is both necessary and difficult, the methods used to aggregate and analyze the data are not clearly described or specified, leading to misunderstanding or questions about the validity of the diagnosis and recommendations. Although staff have made themselves available after publication to answer questions raised by authorities and other readers, this has not been sufficient to avoid misunderstandings, which are difficult to dispel once a message is in the public domain. Interviews revealed that some authorities harbor doubts about the way staff produced the numbers underlying certain messages regarding their countries. These doubts may have weakened the Fund's messages and undermined the effectiveness of surveillance.

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