control.[22] Takagi (2018) found that about 15 percent of Article IV staff reports contained a full discussion of macrofinancial links, often supported by accompanying technical analyses. This indicates progress, since a decade ago the number would have been much lower. Many of the best practice cases are from Article IV consultations when there was a recent FSAP or a financial sector TA activity, indicating positive synergies. In fact, most IMF staff responding to the IEO survey who had worked on countries with recent FSAPs stated that FSAPs had played a role in the latest Article IV consultation, either "significantly" or "to some extent." Also, in many of the best practice cases identified in Takagi (2018), the FSAP and Article IV teams shared senior members and the FSAP mission chief participated in the Article IV discussions. As a result, the macrofinancial coverage in the Article IV report was deep and extensive. On the other hand, the discussion in other reports was limited and sometimes pro forma (e.g., included macrofinancial references without a clear analytical basis, as if they were included just to tick a box).

40. **Country officials generally appreciated the increased attention to macrofinancial issues in bilateral surveillance but commented that the value added from Article IVs on financial issues is uneven and often quite limited.** While recognizing that some Article IV teams do excellent, detailed analytical and empirical work, authorities outside the largest and most prominent jurisdictions often felt that Article IV coverage of financial issues was limited, with inadequate understanding of market-related issues and insufficient expertise to follow up on issues raised in previous FSAPs.

41. **An important part of the problem seems to be the still limited integration between the FSAP and Article IV surveillance.** FSAPs are too infrequent to be relied upon to detect fast developing financial stability risks; while Article IV consultations typically do not have the breadth and depth of skills and resources to adequately identify and warn about financial stability risks. These characteristics would require determined efforts to change. FSAPs are too costly to the IMF and too burdensome to authorities to be conducted with high frequency. Article IV consultations cannot be transformed into pure macrofinancial surveillance as they have a broader set of issues to deal with, and extending the team and mission length to cover in depth all the important financial sector issues would require significant additional resources. It is therefore critical to build synergies and better integrate these two activities to deliver timely and effective bilateral financial surveillance.

IV. MULTILATERAL SURVEILLANCE[23]

42. **Multilateral financial surveillance seeks to warn the IMF membership about vulnerabilities and risks to the global financial system and in S29 jurisdictions, and to influence policies and the overall financial regulatory agenda to mitigate risks and**

[22] The quality of the analysis is also higher for the S5, although it is not clear that this is so relative to the analysis of the corresponding authorities.

[23] This section draws on Cecchetti (2018) and Zettelmeyer (2018).

strengthen resilience. The key elements of multilateral surveillance are: the *GFSR*, which analyzes global financial risks and complements the conjunctural analysis of the global economy provided by the *World Economic Outlook (WEO)*; the EWE, which highlights key financial tail risks for a restricted audience of senior policymakers; and work with the FSB and SSBs, aimed at contributing to the design and implementation of global financial reform.

A. The *Global Financial Stability Report (GFSR)*

43. **The *GFSR* is the IMF's flagship report analyzing global financial sector risks for a public audience.**[24] Chapter 1 provides an overview of key risks facing the global financial system and discusses policies to mitigate them. Analytical chapters dig deeper into market and institutional issues, and often serve as an early assessment of new challenges for the official community. Messages of the *GFSR* have in recent years been broadly consistent with the *WEO* (which had been a challenge in the past), and complementary to those of Article IVs in the largest S29 countries, except for some difference in emphasis. The *GFSR* is prepared twice a year by MCM with interdepartmental review and management guidance on topics and messages.

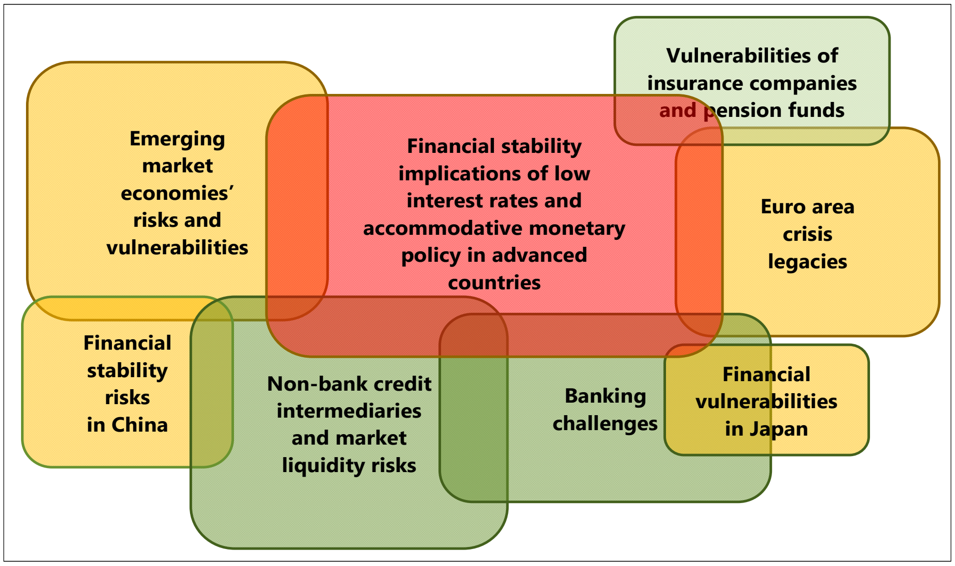
44. **The report is widely read and appreciated by central bank officials (and increasingly in finance ministries)—Chapter 1 for the identification and analysis of global financial risks, and the analytical chapters for providing in-depth investigation of narrower but salient financial stability topics.** Authorities value the *GFSR* as among the best surveys of the state of the global financial system and for bringing attention to new issues with insightful analysis. Authorities particularly appreciate the analytical chapters that are widely seen as bringing early, in-depth attention to emerging issues and serving as a reference for policy discussions. At the same time, authorities and other stakeholders indicated that there could be closer connections between the financial stability overview in Chapter 1 and the topics and messages in the analytical chapters, and that there could be more consistent follow up in subsequent *GFSRs***.** Private sector readers are generally less enthusiastic, finding the narrative too long and too dense, the messages overly nuanced, and the biannual publication too infrequent to provide up-to-the moment views on market developments—although they did appreciate the deeper dive into some of the more difficult issues than usually available in market commentary.

45. **A perennial challenge for the *GFSR* is to bring timely attention to emerging risks.** In interviews, officials were generally positive that the risks and gaps flagged in the *GFSR* provided a careful analysis of difficult and contentious issues. Looking into this issue more systematically, Zettelmeyer (2018) classified the bulk of topics covered during 2013–17 within eight areas of vulnerability (Figure 5)**.** Of central concern were the financial stability implications of sustained low interest rates in the U.S. and other AEs. Intersecting with this concern were risks associated with changes in the structure of financial markets, vulnerabilities of global financial institutions (banks,

[24] In the IEO surveys, more than 90 percent of OED and 80 percent of staff respondents found the *GFSR* useful to understand global developments and risks. Also, OED respondents indicated that more than 80 percent of their authorities found it helpful to identify vulnerabilities and spillover risks.

non-bank credit intermediaries, insurance companies and pension funds), market liquidity risks, and vulnerabilities in specific regions and countries. Examples that were particularly influential include discussions of concerns over the European banking system (April 2016), China's shadow banking (April 2013), the asset management industry (April 2015), and market liquidity (October 2015).

Figure 5. Main Areas of Vulnerability Analysis Covered in the *GFSR*, 2013–17



Source: Zettelmeyer (2018).
Notes: 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 United States and globally.

46. **In hindsight, the *GFSR* did not flag some important risks before they materialized (Type 1 errors).**[25] Examples of Type 1 errors include the "taper tantrum" in the summer of 2013, the financial stability implications of the commodity price downturn in 2014–15, and the cross-border financial spillovers from increased uncertainty about China's currency policy. In each of these cases, risks were extensively discussed in the *GFSR*, but only after the initial event. Thus, the possibility that a reversal of accommodative monetary policy in the U.S. might trigger financial instability was a recurring theme of many *GFSRs* in the 2013–17 evaluation period, but this attention began only after the May 2013 taper tantrum demonstrated this possibility. Similarly, the potentially serious corporate and sovereign distress in commodity exporting countries that could be 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. Financial instability in Chinese equity and

[25] The *GFSR* also warned about many other risks that did not materialize (Type II errors). However, Type II errors are generally of less concern than Type I errors, since the key goal of the *GFSR* is to discuss how risks would impact financial markets and economies if they were to materialize and to suggest mitigating policies. Moreover, one cannot rule out that *GFSR* warnings triggered pre-emptive policy responses that avoided the risk or lessened the repercussions from its realization.

currency markets was not considered until after the 2015 turbulence in the context of China's move to a more flexible exchange rate regime.

47. **When discussing a risk, the *GFSR* is better able than most IMF publications to provide a candid presentation of the analysis and views of the IMF staff on difficult and contentious issues, while generally finding an appropriate balance between unvarnished assessments and necessary care to avoid exacerbating market tensions or even triggering turbulence.** First, the *GFSR* is a staff document, with the appropriate disclaimers about its analysis and policy considerations being those of the authors and not necessarily reflecting the views of the Board or national authorities. Second, MCM staff working on the *GFSR* do not need to maintain a relationship with national authorities and therefore are less susceptible to intellectual capture or pressures.

48. **Nevertheless, authorities from some countries whose financial systems were featured as having vulnerabilities were critical of specific narratives, claims and policy recommendations**. For example, some French and German officials were concerned about the *GFSR's* discussion on the profitability of their banks (Landau, 2018; Anderson, 2018a) and some Chinese officials raised issues with the analysis of shadow banking and the risks of corporate debt (Dollar, 2018). They cautioned that the analysis does not adequately reflect local institutional frameworks and is sometimes based on models that are not transparent or well-explained. They also pointed out that empirical results cannot be reproduced because the *GFSR* does not share the necessary data. Some officials suggested that the *GFSR's* coverage of difficult issues should be discussed with authorities ahead of circulation, giving an opportunity to correct misunderstanding or factual errors (Landau, 2018). Other authorities, however, thought that any such "review" would risk watering down the *GFSR*'s messages and hence diminishing its credibility.

49. **IMF staff are certainly aware of authorities' concerns about market sensitivity and analytical opacity.** MCM staff indicated that they are very careful with their messages to avoid heightening market instability and stressed that efforts were now underway to strengthen the analytical underpinnings and transparency of the *GFSR*. They also noted that the *GFSR* is finalized under tight deadlines that do not allow for consultation with authorities before publication. Drafts are circulated among staff, including country desks, although some area department staff mentioned that they did not get sufficient time to review the drafts and ensure that there were no factual errors or misunderstandings about the countries they cover.

50. **A related concern consistently raised by *GFSR* readers is that the presentation has relied quite heavily on complex and often non-intuitive empirical techniques.** For example, for most of the period, through October 2017, the organizing framework of the stability analysis of Chapter 1 of the *GFSR* was a Global Financial Stability Map (the "Spidergram"). The Spidergram aimed to address the main question that officials and other readers would be interested in: what are the most important changes in global financial stability that have taken place in the past six months? Most officials interviewed had difficulties understanding the Spidergram (as well as most of the accompanying graphs) and could not get an intuition of how and why stability risks had

changed.[26] More generally, readers would appreciate more access to the data being used and greater transparency concerning how the various metrics used are put together, in order to be able to judge their relevance and value.

51. **The *GFSR* team has been making serious efforts to address these concerns.** One clear improvement is that in the April 2018 *GFSR*, the Spidergram was replaced by a global Financial Conditions Index (FCI) and an assessment of "Growth-at-Risk." This new framework was explained in Chapter 3 of the October 2017 *GFSR*, a good example of close integration of the analytical and conjunctural work. The global FCI is based on a smaller number of financial indicators than the Spidergram and is used to forecast the distribution of GDP growth at one-, two-, and three-year horizons conditional on assumptions of financial conditions, i.e., an assessment of growth at risk (GaR). This framework adds rigor to the analysis and provides a more intuitive picture of how financial stability risks have evolved. More broadly MCM is seeking to be more analytically grounded and more transparent in presenting empirical results. Still, as the team continues to refine the models, a challenge will be to improve its overall readability, as many interviewees still found the presentation too technical and difficult to grasp, potentially reducing its influence.

52. **Another challenge faced by the *GFSR* (and the IMF more broadly) is the extent to which it engages with the intense debate on the overhaul of international financial regulatory architecture since the GFC.** The *GFSR* was at the forefront in calling for strengthening financial regulatory systems in the immediate wake of the GFC. In the last few years, however, the *GFSR* has generally played a more subdued role in commenting on remaining weaknesses and gaps in the regulatory framework, even as the debate continued among academics and policymakers.[27] The *GFSR* raised some of these issues, particularly by identifying emerging risks that deserved greater attention from the regulatory community, such as the treatment of the rapidly evolving asset management sector (April 2015). However, more broadly, its messages were often mild and sometimes lacked consistency, especially in the area of newly agreed standards. For example, the April 2014 *GFSR* observed that SIFIs had become larger following the crisis and called for enhancing their capital requirements to eliminate their funding cost advantage from a market perception that they were "too-big-to-fail." But when discussing the capital of the systemic banks, the October 2016 *GFSR* focused on meeting regulatory minimums without examining these standards. More recently, there has been some increased attention. The October 2018 *GFSR* takes stock of the progress achieved in advancing the post-crisis regulatory reform agenda and identifies areas where further actions are needed to complete the reform or to

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[26] As explained in Jeanne (2018), there are also methodological reasons to be skeptical of the Spidergram: it mixed information at very different frequencies, allocated variables to risk categories in non-transparent ways, and reflected judgment calls that are not made explicit.

[27] For example, Kashkari (2018) noted that "… the largest banks are still too big to fail, because they are bigger and more concentrated than ever…. The most efficient way to protect taxpayers would be to force the largest banks … to double their current levels of capital." Goodhart (2017) discussed the need to revisit capital requirements, the increasing concentration in the banking industry, and incentives for board members and managers, noting that "[t]he regulatory framework should be refocused towards … reforming incentives."

address new risks. Concerns in this area were also highlighted in a recent blog by the Managing Director (Lagarde, 2018).

B. The Early Warning Exercise (EWE)

53. **The EWE consists of confidential presentations by the IMF and the FSB to about 50 governors and ministers at the IMF's Annual and Spring Meetings.** It was set up in 2009, at the request of the G20, to identify tail risks, mainly on macrofinancial and financial stability issues, and to connect the dots between different markets, sectors and countries that may play a role in amplifying and propagating these risks. The IMF's presentation is given by the First Deputy Managing Director (FDMD) and the FSB's by the Chair of the Standing Committee on the Assessment of Vulnerabilities (SCAV).

54. **Officials who have attended the EWE presentations indicate that the IMF presentation is thought provoking and generates lively discussions by taking on outside-the-box issues.**[28] Between 2013 and 2016, the IMF's EWE topics tended to focus on macrofinancial issues. Many of the topics were picked up by subsequent *GFSRs*, *WEOs,* and other staff work. In several instances, the EWE succeeded in identifying and thinking through risks that later materialized—for example, discussing the risks of unwinding unconventional monetary policy in April 2013 one month before the taper tantrum. Since 2016, by contrast, IMF presentations have generally focused on risks related to political developments, technological change, fragmentation, and the decline in trust, topics which, although less closely related to the macrofinancial agenda, elicited great interest and again seemed quite prescient.[29] The parallel FSB presentation has consistently focused more strictly on regulatory issues and financial risks and seems to prompt less discussion from the audience. This is in part because much of the material is already well known to the participants since it is reviewed in advance by the SCAV members.

55. **A continuing challenge is how best to coordinate the IMF and FSB contributions to the EWE.** There is early consultation on the choice of topics, and sharing of work in progress, but the two presentations are essentially prepared in parallel by different processes. In addition to the gap in the choice of topics, staff from both organizations pointed to differences in governance and in working processes as precluding a more integrated product. While the IMF's EWE is prepared by an independent staff team, the FSB's presentation is rooted in the views and analysis of its members.[30] It is also circulated to the entire SCAV on a no-objection basis prior to the presentation. Senior IMF officials acknowledged that there could be benefits from greater coordination but cautioned that the two institutions followed quite different practices and

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[28] According to the IEO survey, more than 90 percent of OED respondents who expressed a view indicated that their authorities found the EWE presentation useful.

[29] An exception was the IMF presentation at the October 2018 EWE, which did have a clear macrofinancial focus.

[30] The IMF's EWE presentation is prepared by an ad hoc team that operates outside the usual departmental structure of the IMF, is not subject to the interdepartmental review process, and reports only to the FDMD.

highlighted the risk that a more integrated product would limit the IMF's capacity to provide a timely, up to the moment presentation and to raise out-of-the-box concerns.

56. **Some authorities are satisfied with the EWE as it is, while others see value in seeking greater synergies between the IMF and the FSB**. Some officials believe that the EWE is already achieving what was intended from such an exercise—generating an informed exchange of views about tail risks among the world's highest finance officials. The G20-appointed Eminent Persons Group recently suggested that the EWE could serve more directly to focus senior policymakers' attention on "major conjunctural risks and tail risks in the global system" and "most importantly … facilitate discussions about policy directions and concrete actions to mitigate the key risks and vulnerabilities flagged" (G20, 2018). This would suggest a more robust link between the IMF and FSB presentations, to provide a thorough assessment of financial stability risks that combined the insights and expertise of the two institutions.

57. **A second challenge is how to maximize the broader impact of an instrument that by design is kept in very limited circulation.** Less than one-third of member countries have direct access to the EWE presentations. Even in those countries whose high-level officials attend the EWE session, most senior officials do not know what was discussed in that restricted meeting. There is a payoff to keeping the attendance at the EWE meeting very limited, as this allows for presentation of particularly sensitive issues and provides an arena for a vigorous exchange of views among principals, but it would also seem important for messages to be disseminated more broadly without compromising confidentiality. Senior IMF staff are aware of the challenge. They pointed out that EWE work is already being used in developing the IMF's work agenda, that it is often used to select topics for subsequent *GFSRs*, and that outlets are sought for key messages in suitable format for a wider audience—including blogs and speeches.

C. Collaboration with Financial Regulatory Agencies

58. **The IMF has made important contributions to the post-crisis financial regulatory reform process.** As a member or an observer in the FSB and SSBs,[31] its main roles have been to provide a global perspective on macroeconomic and macrofinancial risks, to provide analysis of emerging issues and to represent the concerns of the majority of IMF members that are not members of the FSB or SSBs, while leaving detailed rule-making to the national officials.[32] Examples of areas where the IMF made important analytical contributions include the revision of the Basel Core Principles, sovereign/banking linkages, applications of Basel III standards to emerging market and developing countries and macroprudential frameworks. Also, since 2009, at

[31] These include the Basel Committee on Banking Supervision (BCBS), Committee on Payments and Market Infrastructures, International Association of Deposit Insurers, International Association of Insurance Supervisors, and International Organization of Securities Commissions (IOSCO).

[32] This approach is consistent with the 2008 letter between the Managing Director and the Chair of the Financial Stability Forum (precursor of the FSB) on the respective roles of the two institutions.

the request of the G20, the IMF and the FSB have been leading the Data Gaps Initiative addressing information gaps and deficiencies uncovered by the GFC. The IMF has also co-authored several papers with the Bank for International Settlements (BIS) and FSB on financial stability risks and policy implications (e.g., IMF-FSB-BIS (2016) on macroprudential policies).

59. **Senior officials at the FSB and SSBs indicated their appreciation for the IMF's analytical work, which contributed to the design of reforms and to generate support for them.** The IMF brings an independent view to the discussions on standards, since it is not a directly interested party. Being more removed than national regulators from the regulated institutions, it is less susceptible to political pressure. Moreover, it can bring the concerns of non-FSB members to the table and has at times helped national delegations reach consensus. Nevertheless, the IMF has appropriately not been involved in the detailed negotiations on standards conducted by national representatives. In recent years, the IMF has scaled back its direct involvement in FSB/SSB meetings and working groups due to resource constraints, but its analytical contributions remain relevant.

60. **The IMF helps monitor the implementation of agreed standards and codes.[33]** The FSB and SSBs consider this one of the IMF's key roles. On the other hand, some senior officials suggested that the presence of IMF staff in FSB/SSB meetings could constrain the openness with which participants were willing to discuss their countries' regulatory/supervisory weaknesses, since these weaknesses may be conveyed to IMF staff conducting bilateral surveillance. At the same time, the IMF may feel constrained to criticize agreed or even proposed regulations due to its status as member/partner of the regulatory bodies. IMF staff did not share these concerns about a chilling effect or possible conflicts of interest in participating in FSB/SSB meetings.

61. **One area where there seems to be considerable scope for the IMF to play a greater role relates to post-implementation impact assessment.** To date the Fund's role has been relatively limited, as impact assessments have either been focused on individual institutions, requiring access to granular supervisory data, or on areas not at the core of the IMF's expertise.[34] But there are areas where the IMF could play a more prominent role. In particular, leveraging its FSAP and Article IV work, the IMF has a clear comparative advantage, working closely with the FSB, SSBs, and BIS, to assess the macrofinancial impact of reforms at the country level. A recent

[33] The IMF also works closely with FATF, the standards setter for anti-money laundering and combating the financing of terrorism (AML/CFT), to conduct assessments of member's compliance with AML/CFT standards. During the past 15 years, the IMF has been involved in more than 70 assessments, many of which are conducted by the Legal Department. Since 2012, Article IV surveillance must also include an AML/CFT assessment when these issues are judged relevant for domestic stability or when they can have a significant influence on the effective operation of the international monetary system. Additionally, FSAPs, to the extent possible, must incorporate an AML/CFT assessment conducted within 18 months of the FSAP mission. However, a 2014 review found that coordinating the timing of inputs from the FATF was a challenge since their assessment cycles were different than for the FSAP (see IMF, 2014d).

[34] The FSB has been tasked by the G20 to lead this work. Two sectoral studies now underway are on the impact of reforms on infrastructure finance and on credit to small and medium enterprises.

example of such work is provided by the 2017 FSAP for Peru, which looked at the impact of more demanding bank capital adequacy standards on credit availability. The Fund would also have a comparative advantage at looking at the cross-border and global impact of regulatory changes and in preparing global stress tests focusing on interconnectedness and spillovers.

62. **Increasing attention to such work would certainly face challenges.** By its nature, such work is quite resource intensive at a time when MCM resources are stretched. In addition, limited access to data remains a key constraint to greater IMF contributions at the global and country levels. MCM staff noted that greater access to granular data on G-SIFIs would be needed to enable the IMF to significantly extend its work on these issues.

V. ANALYTICAL TOOLKIT[35]

63. **As called for in the 2012 Financial Surveillance Strategy, the Fund has taken part in broader efforts in the economics profession to upgrade the analytical and empirical techniques used for analyzing macrofinancial linkages and financial stability risks.** Considerable advances have been made since the GFC in macrofinancial modeling, in building risk indicators and in developing tools to assess financial stability, although there is a widespread sense that this agenda remains a work in progress. The post-crisis academic literature began to model systemic financial crises by granting a more important role to financial intermediation and liquidity risks.[36] The U.S. Federal Reserve and other AE central banks continued to introduce financial factors into their forecasting models as exogenous shocks to risk premia and started to develop new models to study specific questions at the frontier of macroeconomics and finance. Separately, the BIS was a pioneer in research suggesting that excessive credit growth is a robust early indicator of future economic and financial trouble, and its measure of the credit gap is widely used.

64. **A background paper for this evaluation (Jeanne, 2018) assessed the extent of the Fund's contribution to this developing field.** It found that the Fund has made important contributions in areas such as macrofinancial modeling, indicators to monitor financial risks, and tools for stress testing, but that its cutting-edge contributions have been limited compared to work done in central banks of the major AEs—a perception broadly shared by academics and senior officials interviewed for the evaluation.

65. **An important point of attention for Fund research has been macrofinancial modeling.** For example, MCM has developed a Global Macrofinancial Model (GFM) for use in the *GFSR* and elsewhere while RES has incorporated financial frictions into its Global Integrated

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[35] This section draws on Jeanne (2018).

[36] See, e.g., Gertler and Karadi (2011); Brunnermeier and Sannikov (2014); Gertler and Kiyotaki (2015) for academic contributions; Chung and others (2010), from the Federal Reserve; and Drehmann and Tsatsaronis (2014) from the BIS.