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2021 FINANCIAL SECTOR ASSESSMENT PROGRAM REVIEW—BACKGROUND PAPER ON SCOPE

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- A **Press Release** summarizing the views of the Executive Board as expressed during its May 12, 2021 consideration of report.
- **The 2021 Financial Sector Assessment Program Review—Towards a More Stable and Sustainable Financial System report**, prepared by IMF staff and completed on April 15, 2021 for the Executive Board's consideration on May 12, 2021.
- The **Background Paper on Quantitative Analysis,** prepared by IMF staff and completed on April 15, 2021 for the Executive Board's consideration on May 12, 2021.
- The **Background Paper on Traction,** prepared by IMF staff and completed on April 15, 2021 for the Executive Board's consideration on May 12, 2021.
- The **Background Paper on Scope,** prepared by IMF staff and completed on April 15, 2021 for the Executive Board's consideration on May 12, 2021.

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2021 FINANCIAL SECTOR ASSESSMENT PROGRAM REVIEW—BACKGROUND PAPER ON SCOPE

Approved By
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CONTENTS

Glossary

AML/CFT	Anti-Money Laundering/Combatting Terrorist Financing
BCBS	Base Committee for Banking Supervision
BCP	Basel Core Principles
CCP	Central Counterparty Clearing House
CPMI	Committee on Payments and Market Infrastructures
DAR	Detailed Assessment Report
FATF	Financial Action Task Force
FASN	FSAP Approach and Staffing Note
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSLC	Financial Sector Liaison Committee
FSPN	FSAP Financial Sector Policy Note
FSSA	Financial System Stability Assessment
FX	Foreign exchange
GFC	Global financial crisis
GFSR	Global Financial Stability Report
G-SIFI	Global Systemically Important Financial Institutions
GST	Global Bank Stress Test
G20	Group of 20
IAID	International Association of Deposit Insurers
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principles
ICT	Information and communication technology
IEO	Independent Evaluation Office (of the International Monetary Fund)
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
KA	Key Attribute
MCM	Monetary and Capital Markets Department
MPM	Macroprudential policy measure
NBFI	Nonbank financial institution
NFC	Nonfinancial corporation
NGFS	Network for Greening the Financial System (Central Banks and Regulators)
NPL	Nonperforming loan
RAM	Risk Assessment Matrix
ROSC	Report on the Obserbance of Standards and Codes
SSB	Standard Setting Body
TA	Technical Assistance
TN	Technical Note
UST	Universal Bank Stress Test

INTRODUCTION

1. Financial stability assessments under the Financial Sector Assessment Program (FSAP) have been based on a three-pillar framework since 2009. The 2009 FSAP Review (IMF, 2009a, 2009b, and 2009c) established financial stability assessments as a key responsibility of the Fund and defined the three pillars of such an assessment: risk analysis, oversight, and safety net. This framework allows the scope of topics to be examined in FSAPs to consider that member countries differ in their risk profiles, levels of complexity of policy frameworks and practices. In recent years, new financial stability risk factors have emerged, including risks from nonbanks, climate change, fintech, and cybersecurity.

2. This background paper reviews the development of the scope of financial stability assessments under the FSAP since the 2014 FSAP Review (IMF, 2014a). It starts with the overall scope issues such as the robustness of the three-pillar approach, drawing on the qualitative risk assessment matrix to set the scope of work, risk-focused approach for standard assessments, and possibilities for thematic approaches. On specific topics covered in each pillar, it is important to note that the financial stability landscape and international standards continue to evolve. Therefore, the choice of topics and assessment methods will need to continue to adapt. The paper summarizes past experiences of such adaptation and observed trends with respect to the coverage of specific topics and then discusses possible directions to adjust the scope of future FSAPs over the next five years given the likely changes in the financial stability landscape. The paper also discusses collaboration with the World Bank as it pertains to the scope of financial stability assessments. It does not examine issues such as analytical approaches, participation, and resources, which are covered elsewhere in the FSAP Review.

3. Striking a balance between the FSAPs analysis of long-standing and new issues will be a challenge. New potential sources of financial stability risks are arising, with the growth of non-bank financial institutions (NBFIs), increasing cross-border and cross-sectoral interconnectedness, and new risks from digitalization and climate change. Existing international standards continue to be updated and new standards may be introduced. An example is the methodology to assess Key Attributes of Effective Resolution Regimes for insurers, which staff are asking the Board to endorse as the assessment benchmark in FSAPs and stand-alone assessments. At the same time, traditional macrofinancial risks, especially those facing banks, remain very relevant in most of the IMF membership. Given resource constraints, FSAP teams will need to further leverage the scoping process to prioritize new risks.

4. More generally, staff analysis and surveys of authorities suggest opportunities to strengthen prioritization to scope FSAPs (Table 1). Specifically, the risk focused approach to scoping financial stability assessments can make even greater use of flexibility within the three-pillar framework, especially to incorporate the growing risks from nonbank financial intermediation, climate change, and digital technologies. Striking a balance between the FSAP's analysis of traditional and new risks within a given budget will require effective prioritization. Staff will leverage the findings of recent detailed standards assessments to tailor the scope of

the FSAP. FSAPs should continue to use a risk-based approach to decide whether to conduct a detailed standards assessment or a more focused review.

Table 1. Proposals to Strengthen Scoping

#	Proposal
I-1	Use the flexibility in the three-pillar framework to capture emerging risks and prioritize scope according to systemic importance.
I-2	If a recent positive comprehensive standards assessment is available, structure the financial stability assessments around one or two cross-cutting themes while preserving assessments across all the three pillars.
I-3	Continue to use the risk-focused approach to international standards, as per IMF (2017a)
I-4	Endorse the Key Attributes of Effective Resolution Regimes as the assessment benchmark for insurance resolution frameworks in FSAPs and stand-alone assessments and the Key Attributes Methodology for the Insurance Sector.

OVERALL SCOPE

A. The Three Pillar Framework for Financial Stability Assessments

Experience in the Decade before COVID-19

5. Country authorities generally reported that the three pillars provide a useful, risk-based framework for scoping financial stability assessments. In their survey responses in 2019, more than 90 percent of authorities agreed or strongly agreed that the financial stability assessment was clearly structured around the three pillars—risk assessment, financial sector policy framework, and financial safety net. Also, more than 90 percent of the authorities agreed or strongly agreed that the FSAP analysis focused on the most relevant financial sector issues. Similarly, more than 90 percent of the respondents agreed or strongly agreed that the FSAP provided the appropriate breadth of coverage of the financial sector and the appropriate depth of analysis.

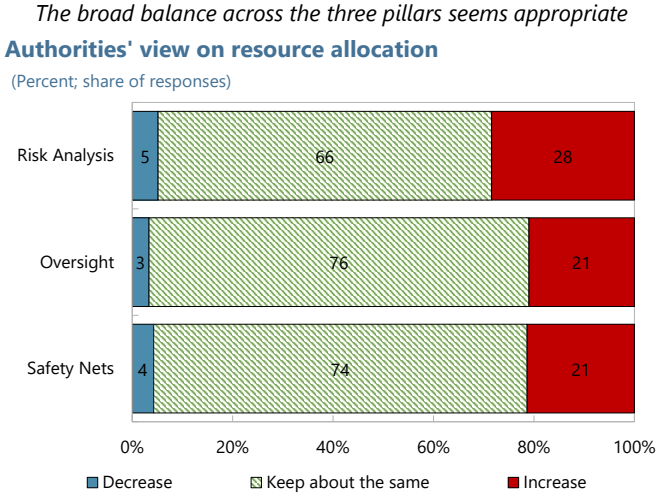
6. Surveys suggested a high degree of satisfaction with the customization of FSAPs. The scope of an FSAP is tailored to each jurisdiction, guided by the FSAP Risk Assessment Matrix (RAM). The RAM focuses on the main systemic risks facing a financial system including the macroeconomic environment, characteristics of the financial system, and the position of real and financial cycles. Overall, 87 percent of the respondents agreed or strongly agreed that analysis was appropriately framed within the country's circumstances, with the remainder calling for greater customization. Some—mostly respondents from jurisdictions that had pre-2014 FSAPs—noted that assessments had relied heavily on international standards, and a majority (60 percent) highlighted that the standardized principle-by-principle assessments of compliance with international standards is among the most useful aspects of the FSAP.

7. Authorities supported the balance across the three pillars of the financial stability assessment. For each of the three pillars, about 95 percent of respondents thought that the pillars' resources should be kept the same or increased, with only about 5 percent suggesting a

reduction (a somewhat higher fraction of respondents called for increasing resources on risk assessments) (Figure 1).

Figure 1. FSAP Scope: Authorities' Views

The broad balance across the three pillars seems appropriate



Source: FSAP Review—2019 Survey of Stakeholders (see background paper on survey for details)

Implications of COVID-19

8. Overall, strong bank buffers and massive policy interventions have thus far limited the impact of the pandemic on the financial system. In the context of the significant global regulatory reform agenda, many banks have strengthened their capital and liquidity buffers over the past ten years, which has helped them absorb the initial impact of the shock. Extensive policy measures (e.g., income support for borrowers, credit guarantees, moratoria, among others) have also helped mitigate the impact on financial institutions temporarily. However, credit risks facing banks could materialize as policy support is withdrawn. Meanwhile, the salience of role of NBFIs in generating potential risks to financial stability has risen since the Global Financial Crisis (GFC). In particular, asset managers in advanced economies entered the pandemic with already elevated vulnerabilities, such as sizeable liquidity mismatches. Their role in the credit market has also increased since the GFC, including in risky leveraged-loan markets and elevating the feedback from their stress to the economic recovery (Global Financial Stability Report, GFSR, October 2020). Moreover, during this crisis, liquidity-strapped asset managers have become even more connected to banks as they drew credit lines, increasing the potential contagion from market selloffs to banks.

9. The economic impact of the pandemic raises new sources of risks that FSAPs will need to consider going forward. Unlike many past crises, the current shock did not originate in the financial system. Instead, the impact has thus far been felt mostly by other economic sectors. Corporate vulnerabilities have increased as firms have taken on more debt to cope with cash shortages amid extreme earning shocks. Underlying liquidity risks could morph into insolvencies, especially if the recovery is delayed, which could spill over to the financial sector. Public finances have deteriorated as fiscal deficits have widened to support the economy, which may eventually elevate sovereign-financial linkages. The future path of default risks in various

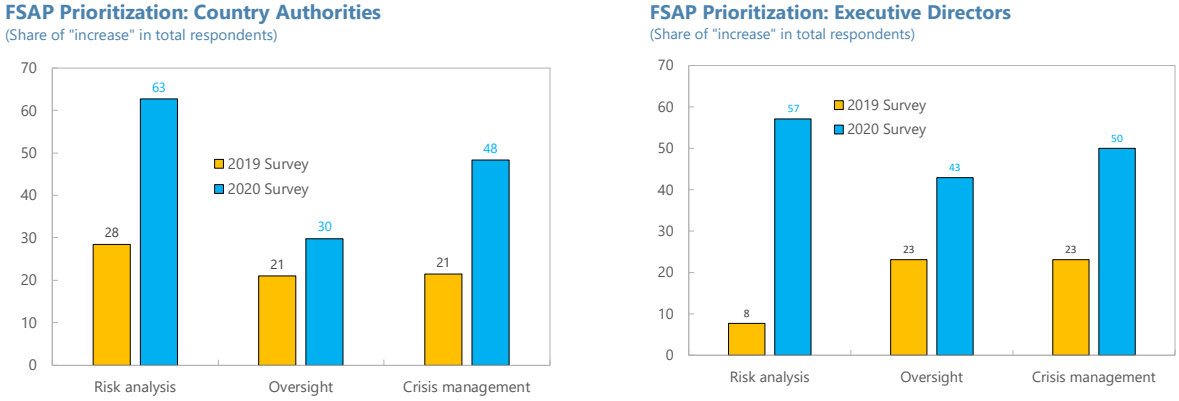
economic sectors will ultimately be shaped by the extent of policy support (including accommodative monetary policy, which could raise risks associated with lower for even longer rates), its withdrawal, and the pace of recovery. The implementation of the global regulatory reform agenda has also slowed down during the pandemic (Financial Stability Board, FSB, 2020 annual report).

10. The updated survey results following the pandemic show increased interest in all pillars of the FSAP. Compared to the results of the survey of stakeholders conducted in 2019, the update in 2020 points to an increased demand by stakeholders for analysis across all three pillars of FSAP (Figure 2). This increase is most marked in the case of authorities followed closely by Executive Directors, with staff also flagging increased needs in the first and third pillars. These results underscore the importance of covering all three pillars in any FSAP, while prioritizing among specific risk factors within each pillar.

Figure 2. FSAP Prioritization—Survey Results

The share of country authorities that consider more work in each pillar of FSAP rose noticeably across all the three pillars.

Executive Directors share similar views.



Source: FSAP Survey and staff calculation.

11. FSAPs in the next five years will likely face several common themes whose relevance will vary depending on the recovery phase from the pandemic. Most countries are still in the first phase requiring continued policy support while uncertainty over the pandemic and economic prospects remains high. Monetary policy looks set to remain accommodative; support measures for the nonfinancial private sector could be expanded/extended, room for regulatory support is being used and macroprudential buffers have been released where feasible. Once the health crisis is under control, policy measures may shift to starting to unwind extraordinary measures such as liquidity support while balancing supporting the recovery. Part of the corporate sector might go through a major restructuring with non-viable firms filing for bankruptcy. Banks will need to support financing the economic recovery by restructuring problem assets. This restructuring could be accompanied by a significant reallocation of resources across industries—while this occurs, the debt overhang will likely weigh on investment. Once economic recovery is underway, prudential buffers will need to be rebuilt. The global regulatory reform agenda will likely be refocused on areas of stress revealed during the pandemic, including the role of NBFIs and market liquidity and functioning.

12. In this context, the flexibility of the three-pillar approach can be applied in FSAPs over the next several years as the effects of the pandemic are addressed. New sources of financial stability risks from the pandemic could be handled by shifting the focus within respective pillars.

- ***Pillar 1:*** FSAPs may need to dive deeper into assessing granular risks arising in the household, corporate, and the public sectors. One distinct feature of the pandemic shock is that the impact on the real economy differs substantially across industries. Some industries could face long-term business model challenges and persistent earnings losses. The impact of the pandemic on bank capital will depends on banks' exposures to troubled business sectors, which could be quite heterogeneous in the context of the current crisis. Bank-sovereign linkages could re-emerge given the deterioration of fiscal positions across the membership. The impact of the pandemic also underlines the importance of assessing systemic risks arising from interconnectedness, domestic and cross-border feedback effects, and the vulnerabilities of the NBFIs.
- ***Pillar 2***: FSAPs will need to assess the effectiveness and adequacy of various regulatory responses and recommend adaptations as needed. The joint IMF-World Bank staff paper on regulatory issues (IMF and World Bank, 2020) and various MCM staff COVID-19 notes (such as IMF, 2020a and 2020b) on regulatory and supervisory responses to the pandemic will support the consistency of assessments and policy advice across countries. As the regulatory reform agenda on NBFIs progresses, new principles and guidance will strengthen the assessment of these institutions and market functioning. The pandemic has also elevated the role of Fintech solutions and could accelerate the adoption of these new technologies with potential implications for the structure and stability of payments and financial systems, including potential risks on cybersecurity.
- ***Pillar 3***: the emergence of systemic financial system distress in some jurisdictions as a result of the pandemic, would test the frameworks for resolution, safety nets, and crisis management. In addition, the uncertainty over the longer-lasting effects of the crisis for the real economy could raise challenges for some FSAPs to discuss the implications of corporate debt restructuring for the financial system and the adequacy of corporate insolvency frameworks.

B. Risk Assessment Matrix

13. By focusing on systemic risks, the RAM plays a critical role in FSAP scoping and prioritization. The RAM focuses on the main systemic risks facing a financial system, including the macroeconomic environment, the characteristics of the financial system, and the position of real and financial cycles. Both the design of the RAM and the discussion of scope are conducted in close consultation with Article IV teams.[1] Respondents to the surveys of country authorities

[1] Furthermore, the FSAP Approach and Staffing note, an internal document prepared before the scoping discussion with authorities, is required to include a summary of recent Article IV analysis and policy recommendation on financial sector issues.

and Executive Directors expressed a high degree of satisfaction with RAMs' focus on the most relevant risks, including their ability to trace the relevant propagation channels of such risks and to incorporate the role of mitigating policies when estimating the shocks' impact. Indeed, the RAM has helped expand the scope of FSAPs to include new sources of systemic risks such as NBFIs and capital markets. The use of RAMs has also strengthened the analysis of interconnectedness, cross-border exposures, and spillovers.

14. In contrast to the Global RAM and Article IV RAM's, the FSAP RAM focuses on the financial sector and looks further into the tail of the risk distribution. RAMs prepared for both FSAPs and Article IV surveillance are linked to the semi-annually updated Global-RAM, representing the Fund-wide view of the key risks in the global economy. However, while the G-RAM and RAMs for Article IV's emphasize high and medium likelihood events, the FSAP RAM includes "low likelihood but plausible" events if they could result in systemic distress of the financial system. Also, Article IV and FSAP RAMs differ as the former covers a wider range of macroeconomic risks, while the latter has a deeper coverage of financial stability risks.

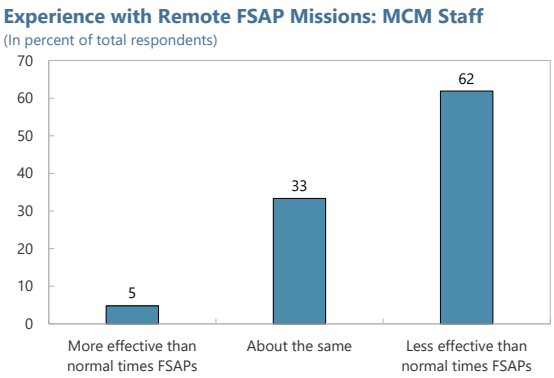
C. Modalities

15. Going forward, staff will need to carefully consider whether and if so how remote engagement could improve the effectiveness of FSAPs. The 2021 FSAP Review survey shows that MCM staff consider that remote engagement is less effective than physical missions, given the challenges of building relationships with authorities and engaging in sensitive conversations (Figure 3). Time zone differences and remote sharing of confidential data are other impediments. In MCM staff's view, the lower effectiveness of remote engagement may offset travel cost savings, at least for some types of missions. The survey comments suggest that remote engagement could be considered for the scoping mission, but that physical visits would be more effective for main missions.

Figure 3. FSAP Experiences with Remote Engagements

Q: How was your experience with remote FSAP missions compared to "normal-time" FSAPs?

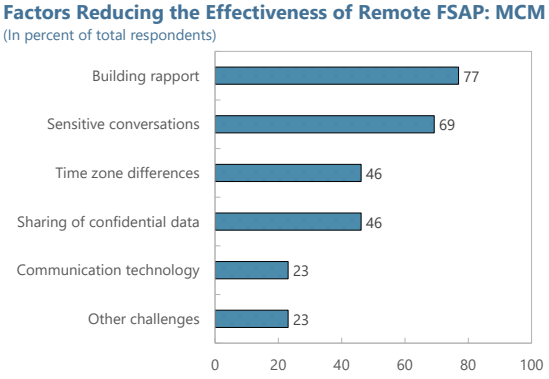
MCM staff consider that remote engagement is less effective.



Sources: 2020 FSAP Review Survey and staff calculation.

Q: Why was this FSAP less effective than normal-time FSAPs?

Building rapport, holding sensitive conversations, followed by time zone differences and sharing of confidential data are key contributors



Sources: 2020 FSAP Review Survey and staff calculation.

Source: 2021 FSAP Review Survey.

D. Risk-Focused Approach to Assessing International Standards

16. FSAP assessments of microprudential oversight, financial safety net, and financial integrity are based on international standards set by standard-setting bodies (SSBs). The Basel Committee for Banking Supervision (BCBS), the International Association of Insurance Supervisors (IAIS), the International Organization of Securities Commissions (IOSCO), the Committee on Payments and Market Infrastructures (CPMI), the Financial Stability Board (FSB), and the International Association of Deposit Insurers (IADI) each issue standards that express the international community's expectations for regulation and supervision. The Financial Action Task Force (FATF) sets standards for Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT). The standards can be used in one of two ways:

- ***A graded assessment***: given that the various principles under-pinning best practices for oversight are interrelated, in this approach the standard will be assessed in full grades based on the assessment methodology laid out by the individual SSB that sets the standard and assessment methodology. The output is a "Detailed Assessment Report (DAR)." It provides the most comprehensive pictures of the prudential framework and strong incentives to countries to improve their regulatory frameworks and supervisory practices.

- ***A focused review***: a standard can also be used as a benchmark to analyze specific prudential or supervisory gaps, which could exacerbate or fail to contain systemic risk. The output of the focused review is an FSAP Technical Note (TN). It allows FSAPs to focus on the most relevant activities, particularly for standards that include numerous subsectors (e.g., securities standards that include asset managers, audit firms, rating agencies, among others).

17. Authorities are generally comfortable with the guidance on how to use standards in FSAPs. The guidance, spelled out in IMF (2017a and 2017b), is that "the decision about whether to conduct a graded assessment or a focused review drawing on a supervisory standard in a specific area will continue to be by agreement between staff and the authorities. The decision will be based on the relative importance of the specific sector, the degree of vulnerabilities, the overall priorities of the FSAP, the extent of changes in the sector or the oversight framework, and the extent of changes in the standard or assessment methodology since the last graded assessment." In responding to the FSAP survey, 86 percent of the respondents thought the IMF guidance was appropriate. Overall, respondents supported the greater flexibility enabled by the focused review of supervisory issues, although some observed that the DARs had some benefits due to standardization and comparability. Among the specific suggestions in this area was to discontinue a ROSC when a DAR is published.

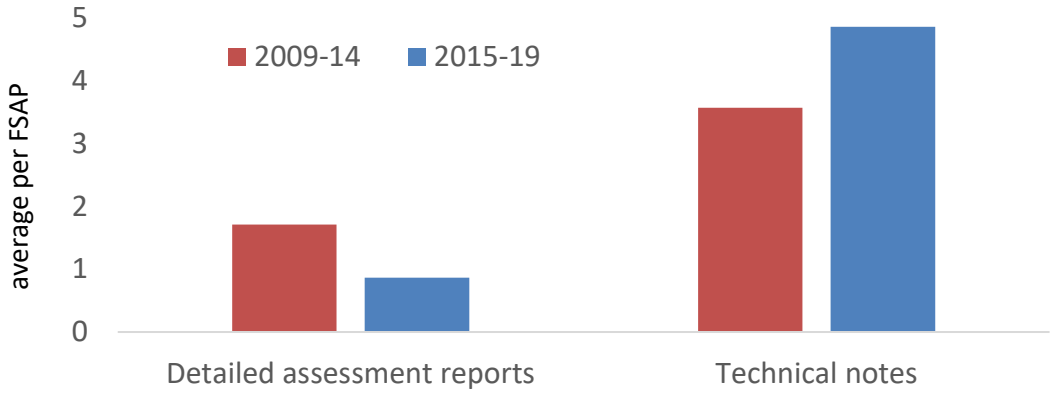
18. The number and modality of the assessments are chosen jointly with national authorities during the scoping discussions, balancing resources and desired scope. It is based on the relative importance of the specific sector, the degree of vulnerabilities, the overall priorities of the FSAP, the extent of changes in the sector or the oversight framework, and the extent of changes in the standard or assessment methodology since the last graded assessment. Staff draw upon desk analysis of macrofinancial risks, structural and conjunctural factors, recent

institutional and supervisory developments, and an up-to-date self-assessment provided by the authorities.

19. Given the emphasis on systemic risk, FSAP coverage of oversight and financial safety nets has become more risk-based since 2014. Since the 2014 Review (IMF 2014a), in countries where compliance with updated financial sector standards has been established in previous FSAPs, assessments under the FSAP have made less use of formal graded assessments of standards and more use of focused reviews, which allow for a deeper dive into selected topics. As a result, the number of DARs per FSAP has declined while the number of TNs has increased (Figure 4). Also, the emphasis in the FSSA and the Key Recommendations Table is placed on those regulatory and supervisory shortcomings that are more related to systemic risk. Since the 2012 update of the Basel Core Principles (BCP) and the 2011 update of the Insurance Core Principles (ICP), most jurisdictions with mandatory FSAPs have undergone full assessments, providing the foundation for the subsequent FSAPs to focus on progress in addressing previously flagged weaknesses.

Figure 4. Changes in Scope: Detailed Assessment Reports and Technical Notes, 2009–14

The structure of FSAP outputs has been shifting, with lower use of Detailed Assessment Reports.



Source: IMF staff based on Mission Tracking System and a survey of relevant central bank websites.
Note: The IMF and World Bank have recognized international financial sector standards in the areas of banking supervision, securities regulation, insurance supervision, deposit insurance, financial market infrastructures, and resolution regimes for banks. In addition, FSAPs occasionally assess other standards concerned with market integrity such as corporate governance, accounting, auditing, and insolvency and creditor rights, led by the World Bank.

20. The shift largely reflects the fact that many jurisdictions have already been fully assessed based on the standards that were updated after the GFC. However, the ICPs were updated in November 2019 with substantive changes including new provisions focused on systemic risk. This may trigger some more insurance DARs in future FSAPs. In the securities sector, a targeted review of the IOSCO principles is generally more suitable. A full assessment covers all the subsectors of the securities business (e.g., asset managers, brokers, dealers, hedge funds, rating agencies, and auditors), not all of which are relevant in all jurisdictions.

21. Ensuring a sound regulatory framework and effective supervision continue to be core to the FSAP. This requires adequate resourcing of the assessment of sectoral supervision. For members subject to mandatory FSAP participation every five years, adequate coverage and intensive review of key topics must be considered over time. Full assessments for banks and

insurers should be recommended at least every ten years and also when the last assessment was conducted using an outdated version of the principles, or when there has been a major change to the regulatory architecture in the jurisdiction (such as a move into or out of a single regulatory authority).

E. Thematic Approach

22. A thematic focus on one or two issues in an FSAP can work well when a previous FSAP has provided a recent and positive comprehensive standards assessment. For example, the 2013 Singapore FSAP undertook a comprehensive assessment of the financial system, finding its regulation and supervision "among the best globally," facing "manageable" risks, and its crisis management and resolution arrangements "generally strong." Therefore, the 2019 FSAP focused on two themes: the financial system's cross-border links and the challenges posed by current and prospective financial innovation. This choice was warranted by Singapore's role as a financial center and the country's rapidly evolving fintech sector. In addition to a focused review of bank regulation and supervision, the FSAP also paid special attention to two areas where standards have evolved considerably since the last FSAP: financial markets infrastructures and crisis management and resolution. A thematic approach would not be appropriate without a recent and positive comprehensive assessment.

23. The choice of the 1-2 themes would be based on their relevance to financial stability in the particular jurisdiction. The scoping process is a risk-based approach anchored by the FSAP RAM. The same criterion and process would apply to 1–2 themes. The thematic approach would allow selecting a topic that does not cut across all three pillars, as long as the topic is important to financial stability.

24. The thematic approach may also be useful for regional exercises in regions with strong financial linkages but without supra-national authorities. For example, in the past, in the Nordic countries, staff have made efforts to cluster FSAPs over two years and closely coordinate approaches across FSAPs. A formal "regional FSAP" for a region without common supra-national authorities would be difficult, given the absence of a clear counterpart to engage with the mission and follow up on recommendations. Instead, a regional exercise on a thematic topic, could be conducted to complement national FSAPs, subject to resource constraints.

PILLAR 1: SCOPE OF RISK ANALYSIS

The Evolving Scope

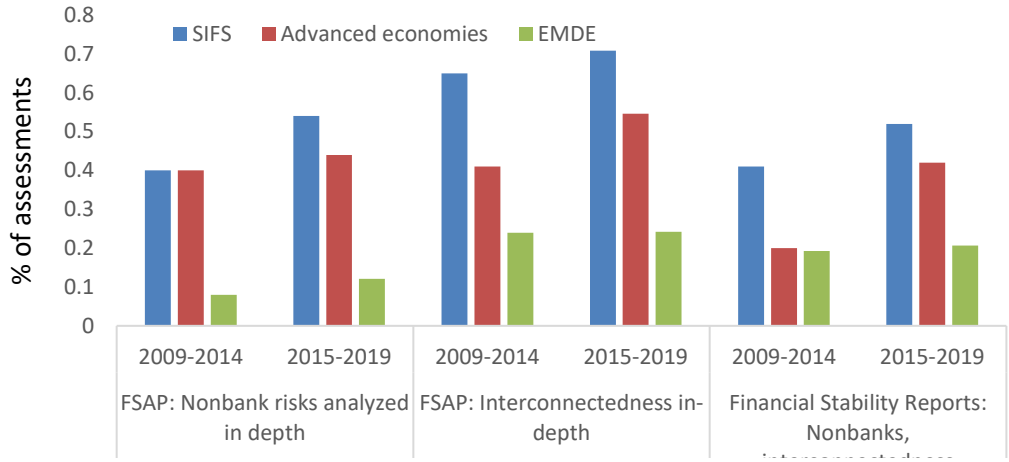
25. A review of financial stability assessments since 2009 points to shifts in the focus of the risk analysis in line with the evolving financial landscape. Potential sources of financial stability risks have been expanding with the growth of NBFIs in asset, funding, and credit markets,[2] increasing cross-border and cross-sectoral interconnectedness, and new risks from digitalization. The most visible aspects of this evolution are shifts in risks from banks to NBFIs in many major jurisdictions and the growing emphasis on interconnectedness. In

[2] See the Global Monitoring Report on NBFIs by the Financial Stability Board (FSB).

response, FSAPs have been expanding the menu of potential risk analysis, increasing their focus on NBFIs and interconnectedness, largely in line with similar changes in scope and focus observed in financial stability reports issued by central banks (Figure 5). Notwithstanding the broader menu of potential topics, resource costs have been broadly flat, suggesting that prioritization efforts have been successful.

Figure 5. Changes in Scope: FSSAs and FSRs, 2009–14

The scope of the quantitative work has been shifting towards analysis of nonbank financial institutions and interconnectedness, in line with similar trend in central banks' financial stability reports.

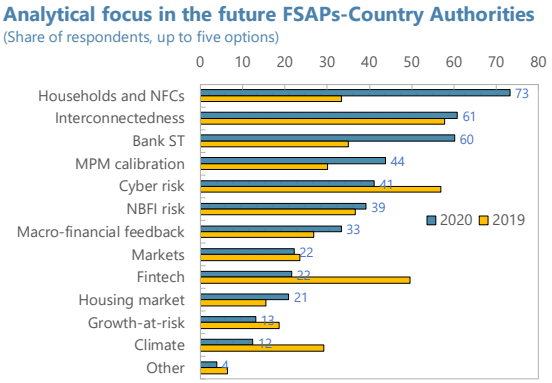


Source: IMF staff based on Mission Tracking System and a survey of relevant central bank websites.

26. The pandemic will put increased focus on risks to financial stability from corporate and household vulnerabilities and bank-sovereign linkages. The 2020 survey of stakeholders revealed increased interest in analytical focus on crisis-related risks. Country authorities are now more interested in vulnerability assessments of the household and corporate sectors and bank stress testing, followed by macrofinancial feedback effects and quantitative calibration of macroprudential measures (MPMs). Demand for interconnectedness analysis remains strong. Staff view that risks from potential bank-sovereign loops and emerging risks related to climate change and cyber issues also merit further analysis.

Figure 6. FSAP Analytical Focus—Survey Results

Demand for household and NFC analysis and bank stress tests rose upon COVID-19 crisis while interest in interconnectedness remains high.



Source: FSAP Survey and staff calculation. MPM = macroprudential policy measure; ST: stress test

27. In response to these shifts, staff have launched efforts to strengthen analytical tools in several areas. As detailed more in the background paper on analytical foundations, some FSAPs have started to include more detailed analysis of household and corporate sector vulnerabilities, quantitative calibration of MPMs, NBFI risks and their link to the banking system or financial markets. Additional analysis on selected emerging risks (climate, cyber, and fintech) have also been carried out on a pilot basis depending on their potential systemic relevance. Also, staff have continued efforts to refine and standardize bank stress testing tools. For example, a new credit risk approach is being developed to adapt to the Expected Credit Loss (ECL) framework under the new accounting standard, International Financial Reporting Standard (IFRS) 9, while the staff have also developed Bayesian model averaging techniques that show promise in applications to improve the fit of models used to underpin stress testing. Staff are also developing macro scenario stress testing tools for nonfinancial corporations (NFCs) and households using firm-level and household survey data.

28. The scope of interconnectedness analysis has also been deepened drawing on improved data. In the early years, FSAPs primarily examined interbank and cross-border banking interconnectedness using direct exposure data, partly because similar data did not exist for the other types of financial institutions. As initiatives to close data gaps have borne fruit, recent FSAPs have started to look into cross-financial-segments interlinkages (e.g., banks and asset managers or insurers) and contagion in financial markets (i.e., systemic liquidity). Reflecting stakeholder interest in analysis of risks arising from interconnectedness, NBFIs, and financing markets, it will be important for FSAPs to continue deepening these analyses. In this regard, staff have recently developed a tool to assess system-wide foreign exchange (FX) liquidity risks, investigating liquidity spillover across economic sectors, particularly relevant for small open economies without reserve currencies.

29. Continued effort will be needed to adapt the scope of FSAP risk analysis to the evolving financial stability landscape. Challenges include: extending risk assessment tools (such as stress testing) to cover NBFIs, nonfinancial sectors, and emerging risks, while containing resource needs; (ii) alleviating data constraints, especially with regards the broad interconnectedness and nonfinancial sector analyses discussed above and emerging risks, and (iii) the development of new tools to assess emerging risks and expand the use of stress tests to assess macrofinancial linkages and calibrate MPMs. Specific methodologies are discussed in the background paper on Quantitative Analysis.

A. The Role of FSAP Stress Tests

The Value Added of FSAP Stress Tests

30. Bank stress testing is a core element of the independent financial stability assessment in FSAPs. The 2019 Independent Evaluation Office (IEO) Review on Financial Surveillance (Caprio, 2019) suggested that in the jurisdictions where national authorities have sophisticated stress testing framework, FSAPs should only review the authorities' stress testing framework rather than undertake an independent exercise. The FSAP Review survey suggests that most authorities value the independence of FSAP assessments, including for jurisdictions

other than their own. Moreover, the updated 2020 survey of stakeholder for this review reveals substantially increased interest from authorities in core bank stress testing. The staff consider FSAP stress tests are an essential element of an independent assessment of financial sector risks, similar to the independent assessment of macroeconomic risks in an Article IV consultation. Moreover, Article IV surveillance has frequently leveraged FSAP risk analysis to strengthen macrofinancial integration. Indeed, adaptations of FSAP stress testing tools, such as the Global Bank and Universal Bank Stress Tests (GST and the UST) currently under development, could be shared with area departments and used to enhance financial surveillance in Article IV's (see the background paper on traction and analytical foundations for more).[3]

31. Independent stress tests are essential for assessing frameworks used in different jurisdictions. Stress tests conducted by FSAP teams allow for comparing risk analysis across different models, which is effective approach to discuss model and parameter uncertainty and assess the robustness of specific stress testing results. Moreover, model comparison exercises by running the same scenarios with the same data across different models is an important and accepted validation technique to understand complex models more generally. Indeed, supervisors in many jurisdictions validate banks' internal models by comparing bank-produced results to the supervisors' top-down models.[4]

32. FSAP stress tests also add value by providing a more macroprudential perspective than is typical in supervisors' stress tests. Most stress testing exercises by national authorities are microprudential exercises. They focus on individual banks' results and use them to inform supervisory actions (such as limiting dividend distributions). These exercises usually do not incorporate contagion and feedback effects that add to systemic risk. FSAP stress tests are designed to be more macroprudential and examine systemic risks[5] by incorporating amplification and feedback effects (e.g., solvency-liquidity feedback, bank-sovereign linkage, bank-NBFI linkage, and second-round effects to the real economy, among others).[6] Moreover, many of these exercises require use of granular bank stress testing models. For example, to estimate the extent of the second-round effects from bank distress to the real economy, one would need an integrated model that includes a bank stress test module and a macrofinancial module (see the background paper on analytical foundation for more details). As such,

[3] GST is a tool to conduct bank solvency stress test using publicly available individual bank financial statement data for about 30 jurisdictions (see October 2020 GFSR, Chapter 4 for details). UST aims to expand the sample countries to about 70, using the jurisdiction-aggregated data from the IMF's Financial Soundness Indicator database and a simplified methodology.

[4] Similarly, the Basel Committee on Banking Supervision (BCBS) has examined banks' internal models for those adopting the Internal Rating Based (IRB) approach by requesting banks to calculate risk-weighted-assets using the same hypothetical portfolio. BCBS (2013) Regulatory Consistency Assessment Programme, Analysis of risk-weighted assets for credit risk in the banking book. The exercise found that calculated risk-weighted assets are widely different across banks.

[5] The IMF defines (IMF, 2013) systemic risk as "the risk of widespread disruption to the provision of financial services that is caused by an impairment of all or parts of the financial systemic, which can cause serious negative consequences for the real economy."

[6] See Anderson, and others, 2018, and MCM departmental paper (Adrian and others, 2020) for IMF views on macroprudential stress tests.

effectively operationalizing fuller macrofinancial linkage analysis in FSAPs places a premium on teams running their own stress testing models.

Challenges from COVID-19

33. The pandemic shock is raising new challenges for FSAP risk analysis. As shown in Figure 6, authorities' demand for household and NFC analyses, bank stress test, and MPM calibration jumped sharply in the context of COVID-19. The new macro-scenario-based household and NFC vulnerability assessment tools currently under development should help near-term FSAPs. The challenge is how to link these vulnerability assessments to bank stress tests. Also, to the extent possible, the bank stress test should consider cross-industry differences as COVID-19 impacted certain industries more than the others. Another challenge to bank stress tests is how to incorporate the effects of mitigating policies at the sectoral level (e.g., guarantees, moratoria, among others). The GST approach presented in October 2020 GFSR illustrated methods to incorporate the effects of government guarantees and capital adequacy policies (i.e., the effects of limiting dividend distribution) in such analyses. The 2020 Philippines FSAP also examined the effects of moratoria on the liquidity shock spillovers between banks and NFCs. Moreover, FSAPs in the next years that use balance sheet data from during the pandemic to anchor their analysis will need to consider making adjustments for the size and duration of supportive policies to reveal the underlying capital position of financial institutions.

B. Data Issues

34. The increases in breadth and depth of risk analysis have been possible in part thanks to improved data quality and access to data in individual country FSAPs. Member countries' sharing of confidential institution-by-institution supervisory data has improved since the 2014 FSAP Review. In all but one jurisdiction, staff working on recent assessments were able to access confidential supervisory data. But accessing confidential data also brings challenges. For example, country authorities often require additional arrangements, such as limited access via a dedicated data room, which adds significantly to mission travel costs and requires highly skilled staff to spend time on data collection and entry-level tasks. Recently, the travel restrictions associated with the pandemic have prevented access to data rooms. Remote data access is critical for successful FSAPs while travel restrictions last [and could be considered more broadly as a resource saving mechanism].

35. In particular, the quality of interconnectedness analysis depends critically on data availability and access. Global efforts, such as the G-20 Data Gaps Initiative (due to be completed by end-2021), have helped close some of the significant data gaps highlighted by the global financial crisis but considerable gaps remain (IMF and FSB, 2019). Authorities have started to collect more data based on activities, including all types of participating institutions and cross-financial segments.[7] At a more aggregate level, more countries have started to

[7] These standards are updated periodically—most recently in 2012 for the BCPs; 2012 for the Principles for Financial Market Infrastructures (PFMI); 2017 for the IOSCO Principles; and 2019 for the ICPs. The PFMI principles are complemented by the CPMI/IOSCO Guidance on Cyber Resilience for FMIs, the CPMI/IOSCO on Recovery of FMIs, and the Financial Stability Board's (FSB) KAs. At this stage, there are no formal standards for digital financial services yet, with the exception of the October 2018 FATF related to virtual asset service providers.

compile cross sectoral data such as flow of funds by counterpart, including on a who-to-whom basis (the so-called balance sheet approach data). These efforts have been supported by technical assistance from the Statistics Department's or as a part of Financial Sector Stability Reviews (FSSR). Using newly available data, some FSAPs have started to analyses interconnectedness and contagion in financial markets (i.e., systemic liquidity). However, gaps remain, including data on NBFIs, sectoral accounts, and cross-border exposures, among others. Moreover, due to confidentiality constraints, FSAPs have generally not benefitted from improved data collection from Global Systemically Important Financial Institutions (G-SIFIs) and market-finance data.

36. Pursuing more efficient confidential data sharing arrangements with national authorities can contribute to lowering FSAP costs and increasing quality. Member countries' sharing of confidential institution-by-institution supervisory data has improved since the 2014 FSAP Review. In most jurisdictions, staff working on recent assessments were able to access confidential supervisory data for bank stress tests, though FSAPs have generally not benefitted from improved data collection from Global Systemically Important Financial Institutions (G-SIFIs) and market-activity data. But accessing confidential data also brings challenges. For example, country authorities often require additional arrangements, such as limited access via a dedicated data room, which adds significantly to mission travel costs and requires highly skilled staff to spend time on data collection and entry tasks. Recently, the travel restrictions associated with the pandemic have prevented access to data rooms. Modalities for remote data access would thus be very helpful to ensure continuity of FGSAP engagement and could save resources more broadly going forward

PILLAR 2: SCOPE OF OVERSIGHT FRAMEWORK ASSESSMENT

A. Macroprudential Policy

Overview

37. The coverage of macroprudential policy issues in FSAPs has become more consistent since the 2014 Review. This was spurred in part by the Staff Guidance Note on Macroprudential Policy (IMF 2014b), which set out a framework for the Fund's advice in surveillance. Virtually all FSAPs now feature a dedicated section in the FSSA supported by a dedicated Technical Note on macroprudential frameworks and tools. FSAPs generally assess three dimensions of macroprudential policy: institutional underpinnings, operational capacity, and a mapping of the risk analysis to priority actions.

38. Advice on institutional arrangements is based on the principles featured in the Board-endorsed Key Aspects of Macroprudential Policy. Together with associate guidance notes, it stresses the need to ensure (i) willingness to act, (ii) ability to act, and (iii) cooperation in risk assessment and mitigation while being cognizant of constraints flowing from the country's legal and institutional traditions.

39. FSAPs also assess operational capacity. Typical recommendations include enhancing analytical capacity, filling data gaps, and expanding the policy toolkit. Analytical capacity assessment is based on the availability and use of indicators of systemic vulnerability, such as the measure of leverage and debt-service capacity. These indicators can be used to assess the potential for macrofinancial feedback effects. Data gaps are often related to NBFIs and real estate prices, and recommendations can also include credit registries and household surveys. Policy toolkit discussion typically includes broad-based tools such as countercyclical capital buffers and systemic risk buffers, more targeted tools such as borrower-based measures such as loan-to-value (LTV) and debt-service-to-income (DSTI) ratios. Policy instruments could be set countercyclically or target structural vulnerabilities. One challenge has been how to design borrower-based measures for the corporate sector, which can switch to non-bank financing sources.

40. FSAPs and authorities have made progress in mapping risk analysis to macroprudential policy actions, although further progress is needed. Most FSAPs provide a comprehensive assessment of different potential vulnerabilities, including broad-based vulnerabilities, vulnerabilities from the indebtedness of the household and corporate sectors, liquidity and FX risks, and structural vulnerabilities from interconnectedness. FSAPs have increasingly leveraged the solvency, liquidity, and interconnectedness analysis to provide macroprudential advice. Some have conducted dedicated analyses to help guide the calibration or assess the impact of macroprudential tools (see background note on analytical foundations for more details). However, there is no widely accepted benchmark framework to provide guidance on macroprudential policy settings. Further progress in mapping risk analysis to policy actions will depend on advances in analytical foundations

The Next Five Years

41. The COVID shock will provide an opportunity for many FSAPs to discuss the effectiveness of macroprudential policy over the medium-term. This will naturally include (i) the agility of policy authorities in taking macroprudential measures in support of the financial system and the economy, (ii) the effectiveness of such support in reducing procyclical contractions in credit, as well as (iii) the mix between the release of dedicated macroprudential buffers on the one hand and regulatory relief on microprudential constraints, such as loan classification rules, etc., on the other.

42. A starting point of such discussion could be to link macroprudential policy calibration more closely with the Pillar 1 risk analysis. This requires that standard stress testing tools are augmented to include macrofinancial feedback, such that lending helps maintain spending (GDP) and/ or debt service of the household and corporate sectors. Such models are starting to be developed using Dynamic Stochastic General Equilibrium models and Structural VAR models. These analyses can be used to assess the effect on losses and macro-economic outcomes of actual and counterfactual policy paths (e.g., 2020 Philippines FSAP).

43. The COVID-19 crisis raised the question whether countries should strive for higher macroprudential buffers in normal times. A classic tenet of macroprudential policy is that

buffers should be "built up in good times" so that they can be "drawn down in bad times". However, the crisis revealed dedicated buffers turned out not to be sufficient in many countries to counter the COVID shock. For instance, only around 15 jurisdictions had built up a positive Countercyclical Capital Buffer (CCyB) before the COVID shock, despite multilateral messages to this effect in the GFSR (see also Nier and Olafsson 2020). Some authorities suggest building up and maintaining a positive "normal" CCyB before imbalances start to build up—the "insurance approach" as in the Czech Republic, Lithuania, and the United Kingdom—instead of doing so when indicators are signaling growing vulnerabilities. The former would secure additional resilience to unforeseen shocks such as pandemic. The approach may be particularly attractive for those countries that struggle to define and track useful indicators of vulnerabilities (e.g., in low income countries, see IMF, 2014d), too. Staff can have a useful role in discussing with the authorities the policy options they have within the flexibility of the standards and against the background of the country-specific experience.

B. Microprudential Policy

Overview

44. Financial sector oversight assessments examine the quality of the institutional setting, the oversight of governance, and the resilience of capital and liquidity in financial institutions. The international SSBs set globally agreed standards and assessment methodologies, covering financial sectors and infrastructure.[8] FSAP assessments start with structural issues such as the independence, resources, accountability, powers, legal protection, and governance of authorities tasked with financial sector supervision. Robust institutional structures and strong independence are essential to address risks to financial institutions and counter political and industry interference. With respect to supervision, assessments cover national requirements and effectiveness of supervisory practices, including a forward-looking identification of risks and supervision of capital adequacy, liquidity, and governance of financial institutions. Oversight assessment is not just about examining the legislative and regulatory frameworks. Since the GFC, the assessment methodology emphasized the importance of the implementation of the legal framework in practice.

45. The assessments by the SSBs themselves complement but are not substitutes for FSAP assessment. SSBs' assessments differ from the FSAP approach, as they depend on self-assessment and peer review. The Regulatory Capital Assessment Process (RCAP) of the BCBS is a very detailed review that focuses on the transposition of the rules and not on implementation. The SSBs acknowledge the significance of the role of the IMF and World Bank in reinforcing the importance of observing their standards and the continuing relevance of international standard setting. Assessments of the oversight framework in FSAPs are a global public good that must continue to be adequately resourced.

[8] These standards are updated periodically—most recently in 2012 for the BCPs; 2012 for the Principles for Financial Market Infrastructures (PFMI); 2017 for the IOSCO Principles; and 2019 for the ICPs. The PFMI principles are complemented by the CPMI/IOSCO Guidance on Cyber Resilience for FMIs, the CPMI/IOSCO on Recovery of FMIs, and the Financial Stability Board's (FSB) KAs. At this stage, there are no formal standards for digital financial services yet, with the exception of the October 2018 FATF related to virtual asset service providers.

Developments Since the 2014 Review

46. The last five years have seen significant headway in implementing the international regulatory reform agenda. These efforts improved the resilience of the global financial systems, as observed in the wake of the COVID-19 crisis. The higher capital and liquidity buffers at the onset of the crisis and swift and bold actions by central banks, fiscal authorities, and financial regulators have been essential in cushioning the economic and financial fallout of the pandemic.

47. FSAPs have examined jurisdictions at various stages of reforms, and some common themes have emerged. Among the main findings were weaknesses in the independence, resources, and accountability of the supervisory authorities. Such weaknesses undermine the supervisors' ability to be assertive, timely, and effective. The importance of gaps in corporate governance have also been increasingly recognized since the GFC. The topic has taken a more central role in both the FSAP and broader IMF work on governance (IMF, 2018). Potential risks associated with related parties and complex conglomerate structures (including mixed conglomerates that include nonfinancial entities or new areas such as fintech) have also gained attention. Even where de jure frameworks have been modernized de facto application could be limited. Many jurisdictions show weakness with regards corporate governance and risks arising from related parties and complex conglomerate structure.

48. National authorities have made significant progress in implementing Basel III. All major jurisdictions adopted the core elements of Basel III risk-based capital and liquidity rules and higher loss absorbency requirements for G-SIBs banks. However, they lag behind the schedule to implement recently finalized additional standards (e.g., interest rate risk in the banking book, IRRBB). Some standards (e.g., leverage ratio) were diluted compared to the initial proposals. FSAPs have increasingly emphasized the importance of incorporating the revised regulations in actual supervisory practices. For example, some FSAPs have observed that the supervision of SIFIs became more intensive than before, but practices were uneven. The need to reprioritize regulatory and supervisory efforts in the face of the COVID-19 has led to several SSBs extending the transitional timetables to implement the new standards. Figure 7 shows more details of how FSAPs examine bank oversight, which is also echoed in the oversight of other sectors.

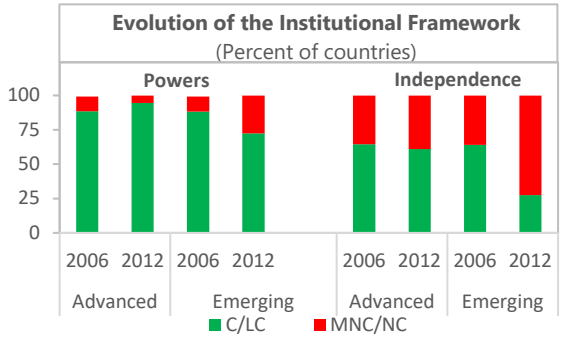
49. In the insurance sector, the ICPs were enhanced significantly in 2019, which could leave significant implementation challenges to some authorities. The ICPs now incorporate Common Framework for the Supervision (ComFrame) of Internationally Active Insurance Groups (IAIGs)—the first global insurance standards for internationally active insurers similar to advanced criteria in the BCPs for banks. The standards and guidance are meant to be applied to 48 currently identified IAIGs[9] with group-wide supervisors in 16 countries, more relevant IAIGs

[9] An IAIG is one which means the internationally active criteria and size criteria specified. Internationally active criteria are: premiums are written in three or more jurisdictions and gross written premiums outside of the home jurisdiction are at least 10 percent of the group's total gross written premiums. Size criteria are total assets are at least US$50 billion or total gross written premiums are at least US$10 billion (calculated on a three-year rolling average).

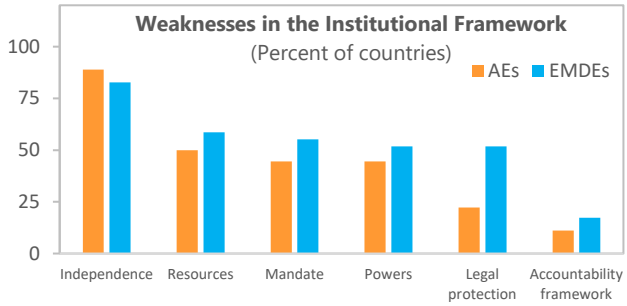
and group-wide supervisors are likely to emerge over time. The ICPs and ComFrame also include new requirements for supervisors to address systemic risk in the insurance sector. Insurance supervisors are now facing significant implementation challenges.

Figure 7. Gaps with Supervision Identified by FSAPs

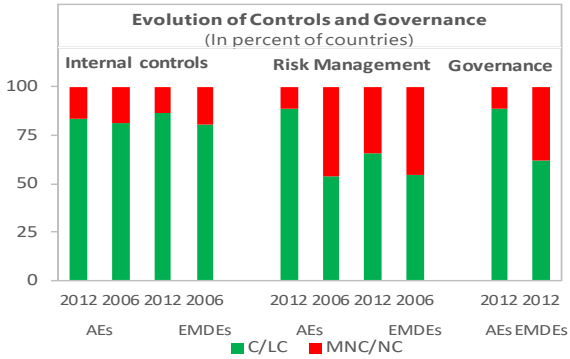
The new standards raised the bar for the institutional framework which many jurisdictions have not met.



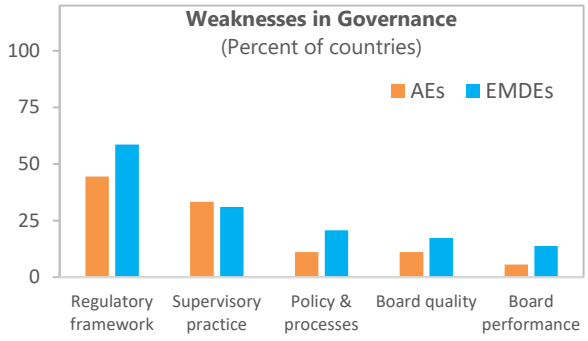
Insufficient independence of supervisors is the most common weakness, followed by lack of resources and absence of a clear mandate for financial stability.



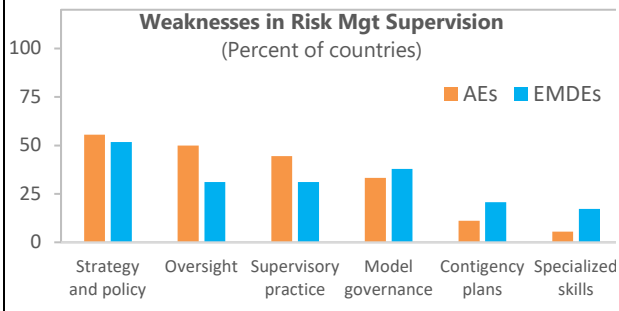
Advances in risk management and corporate governance have consolidated improvements in oversight of internal controls.



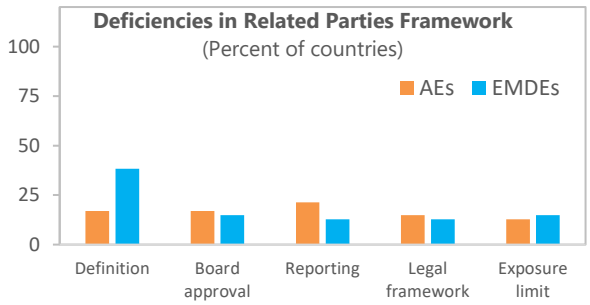
Establishing the regulatory framework for bank governance and adapting supervisory practices are the key challenges faced by many jurisdictions.



Risk management supervision needs to deliver clear guidance to the industry which can be challenging.

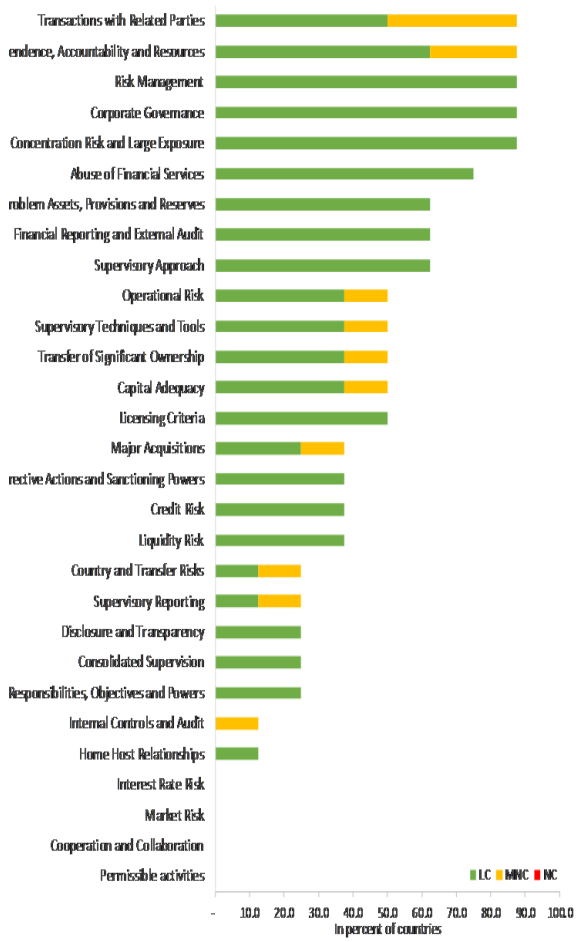


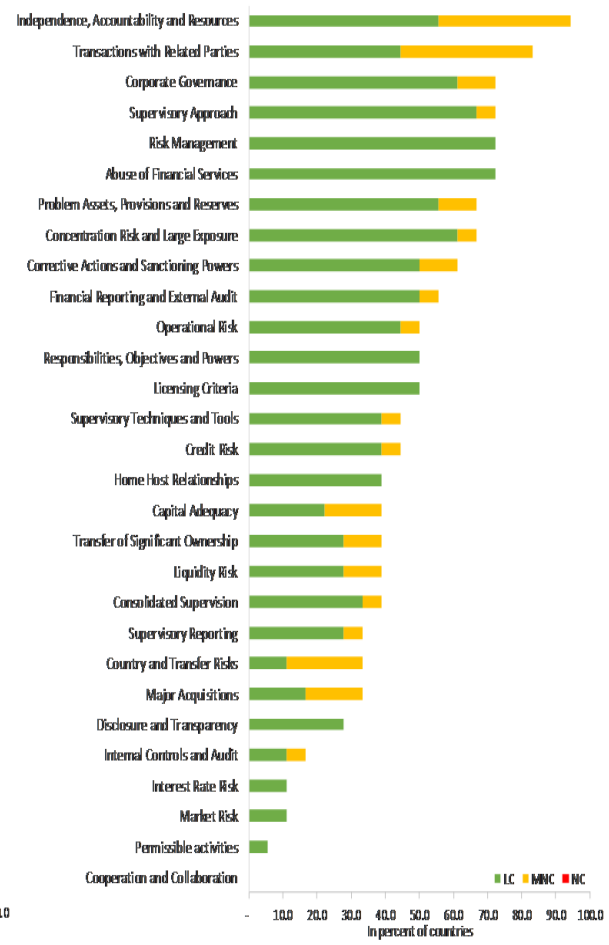
Supervision of related party risks has been poor; a significant flaw has been the absence of or overly narrow definition of related parties' transactions.



Source: Bank for International Settlements, Basel Core Principles for Effective Banking Supervision database, IMF staff.

Table 2. BCP Performance
(By jurisdictions)





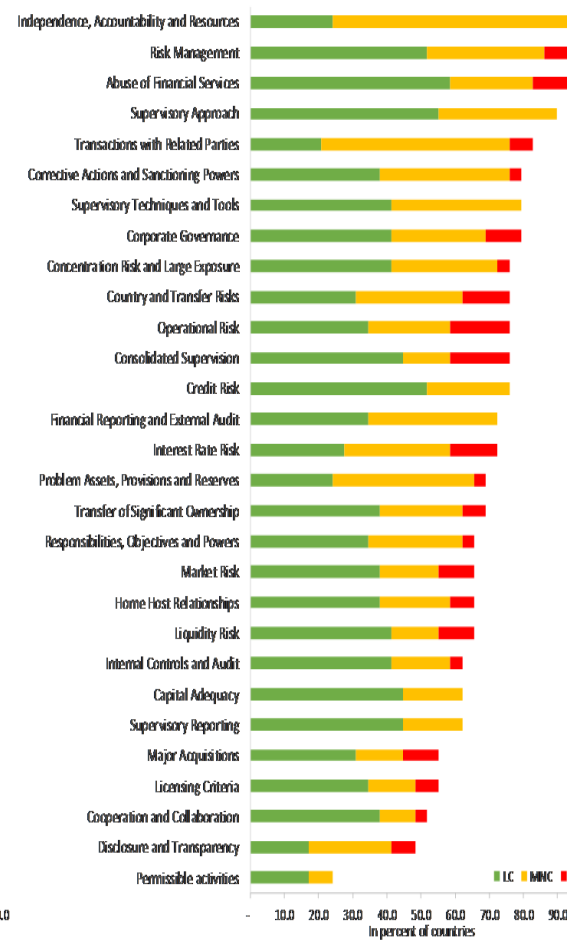


Table 2. BCP Performance (concluded)
(By themes)

Notes: LC = largely compliant; MNC = materially non-compliant; NC = not compliant (three rating categories set by the BCBS)
SB = financial stability board; G-SIB = Global systemically important banks.

50. In the securities sector, COVID-19 revealed vulnerabilities in investment funds, which are likely to require additional regulatory reforms. Since the GFC, the FSB and IOSCO have strengthened the regulatory framework for investment funds. For example, FSB's 2017 Recommendations to Address Structural Vulnerabilities from Asset Management Activities identified that the critical sources of vulnerabilities are liquidity and leverage of investment funds. FSAPs also confirmed the relevance of these vulneraries and suggested reforms. However, the emergence of COVID-19 triggered large outflows from money market funds (MMFs) and open-ended funds invested in risky credit assets and led to market turmoil. Central banks stepped in, acting directly and indirectly as the "market maker" of last resort in multiple markets involving NBFIs. Such intervention was unprecedented in the sense that NBFIs are not usually counterparts of the central bank operation and liquidity facilities. Their actions provided timely and necessary backstops and helped to calm markets. The challenges faced by NBFI suggest that more regulatory and supervisory action and reforms would be needed in the asset management industry.

51. The payments and financial market infrastructure (FMI) sector underwent drastic structural changes in the past decade. FMIs include payment systems, securities settlement systems (SSSs), central securities depositories (CSDs), central counterparty clearing houses (CCPs), and trade repositories. The FMIs play a central role in interbank, money, and capital markets by providing the central infrastructure to clear and settle payments, securities, and derivatives contracts. Since the GFC, there have been conscious efforts to shift bilateral transactions to CCPs, given the difficulty to clear positions vis-à-vis Lehman brothers after its bankruptcy, among others. The shift made some CCPs highly interconnected and systemically important, elevating the importance of their supervision, crisis management framework, and resolution planning. The emergence of digital payments, including fintech and digital currencies, brought in new service providers in the market. It raised new issues such as cyber risk, competition, creating equal footing by expanding regulatory perimeter, and their potential impact on financial stability.

The Next Five Years

52. The COVID-19 crisis has reinforced the lessons learned during the GFC—notably the importance of adequate capital, sufficient liquidity, and comprehensive risk coverage of the regulatory framework. The pandemic experience also highlights the importance of good governance and effective risk management by financial intuitions, proactive supervision, and early intervention by authorities.

53. Assessments of the effectiveness of prudential oversight under pillar 2 will remain a critical component of the FSAPs as international standards continue to evolve. The global financial system continues to undergo profound changes, not least from digitization and the rising roles of NBFIs in asset, funding, and credit markets, and market finance. These changes produce new channels for the propagation and transmission of systemic risk. In response, existing standards continue to be modified and new standards continue to be developed, especially for NBFIs. For example, the revised insurance standards came out only in

2019. Regulatory reforms for investment funds are also relatively new[10] and may need further enhancement in the light of lessons learned from the market turbulence during the pandemic. International standards for payments have not yet fully caught up with digitalization. Also, the evolution of these risks is country specific. Thus, the scope of Pillar 2 work in individual FSAPs will need to integrate country specific characteristics into the assessment of evolving global regulatory reform measures.

54. The regulatory response to COVID-19 and exit strategies could affect oversight assessments in the period ahead. The pandemic has tested oversight frameworks for the first time since the global regulatory reforms. National authorities took various crisis-response measures, such as loan moratoria, expanding government guarantees, releasing additional capital and liquidity buffers, limiting capital distributions to strengthen buffers while downside risks remained high, intervention in markets as the market maker of last resort, and, in some cases, took measures that are not compatible with international standards. The SSBs, IMF, and World Bank issued guidance and statements clarifying international best practices, including on supervisory reporting to assess these measures. Near-term FSAPs will also need to discuss how to adequately withdraw these measures when the pandemic calms down.

55. The coverage on the payment systems and FMIs may need to be enhanced to capture financial stability risks from digital innovations. The treatment of payments and FMIs as an optional element of FSAPs may need to be reconsidered given the rapid growth and transformation of the sector and increasing vulnerability to operational risks from Information Technology (IT) disruptions and cyberattacks. The retail payment segment has registered the most change—fast payments, application programming interface (API), E-wallets, mobile platforms, open banking, distributed-ledger technology (DLT), and new intermediaries. They will need greater coverage as some platforms are becoming critical infrastructures for some jurisdictions. At least, stock takes of digital payments should become an integral part of FSAP assessments to understand the impact on the market structure and ensure that systemic risks do not build up unnoticed.

56. Additional interim assessment tools will need to be developed to complement PFMI and other standards for assessing payments, clearing, and settlement risks. The international standards remain the backbone for FMI assessment. However, standards develop more slowly than digital innovations: there are inherent challenges to establish a forward-looking oversight framework in a rapidly evolving part of the financial system. Thus, the Fund and the Bank will need interim assessment frameworks based on a close dialogue with the SSBs. Furthermore, greater attention may need to be paid to certain operational risks such as IT and cybersecurity, although FSAPs did not assess operational risks historically (as declared on the cover page of FSSAs). There is also a need for assessing how digital innovations alter bank funding and its stability and operational and reputational risks caused by the greater sharing of data and IT connectivity among diverse market players. The perimeter of assessment may need

[10] FSB's 2017 Recommendations to Address Structural Vulnerabilities from Asset Management Activities.

to include third parties, BigTech payment service infrastructure, data governance, the legal basis for DLT-based services.

C. Coverage of Financial Integrity Issues

57. Updates on AML/CFT issues are an essential part of the FSAP.[11] Current Fund policy requires timely and accurate input of AML/CFT information into every FSAP. Including AML/CFT issues in the FSAP process is intended to enable staff to incorporate financial integrity issues into broader financial sector reform efforts and financial stability. High-profile incidents in the past few years have highlighted ML/FT challenges, including in sophisticated financial systems, and that could elevate reputation risks and risks from loss of corresponding banking relationships. For smaller, less developed economies, weak assessment results could also adversely impact correspondent banking relationships and affect international trade and remittances. Furthermore, weaknesses in AML/CFT framework could also lead to delayed payout by deposit insurers in the event of bank failures.

58. Since 2014, discussion of AML/CFT issues in FSAPs has been mandatory but flexible in scope (IMF, 2014c). The scope, depth and modalities of staff's analysis has varied. Depending on the availability of a recent assessment and other relevant information, AML/CFT discussions take the form of technical notes, annexes, background notes to the Aide Memoire, or several paragraphs in the FSSA.

59. The flexibility allows for more focused discussions and more targeted recommendations. It also helps avoid unnecessary duplication with the formal AML/CFT assessment process by the FATF and FATF-style regional bodies. In line with the Executive Board's guidance, the AML/CFT input is, where possible, based on a comprehensive AML/CFT assessment or, in due course, a targeted reassessment against the prevailing standard finalized prior to the FSAP. If such an assessment is unavailable, staff may derive main findings based on other relevant sources of information (e.g., previous AML/CFT assessment reports, Fund reports, national risk assessment reports, the authorities' responses to questionnaires prepared for the FSAP, and other reliable information). Greater reliance on assessment reports by the FATF, FATF-style Regional Bodies, and other assessment groupings is expected as the current assessment round advances.

60. The inclusion of AML/CFT issues in the FSAP has helped deepen global understanding of the standards and highlighted that robust AML/CFT implementation contributes to financial stability and development. The issues discussed in FSAPs have varied, depending on the severity of AML/CFT challenges in the country and their relevance to the financial sector. Most of the issues raised have pertained to preventive measures (e.g., customer due diligence measures), the country's assessment of its money laundering and terrorist financing risks, risk-based AML/CFT supervision, and transparency of beneficial

[11] In keeping with the terminology used in 2014 (see IMF 2014c), this text refers to "AML/CFT updates," which, in practice, covers financial integrity issues more broadly (see IMF 2019.)

ownership of legal persons and arrangements. Other issues discussed include terrorist financing and targeted financial sanctions, suspicious transactions reporting, the effectiveness in the use of financial intelligence, and international cooperation.

PILLAR 3: SCOPE OF FINANCIAL SAFETY NETS

Overview

61. Effective frameworks for crisis management, safety nets, and resolution of financial institutions are a critical component of the financial stability framework. FSAPs have a central role in assessing the robustness of countries' financial safety nets, i.e., the arrangements for supervisory intervention; resolution of financial institutions; deposit insurance; and emergency liquidity assistance (ELA). Just as past crises have underscored the importance of well-developed financial safety nets and good planning (e.g., institution-specific recovery and resolution plans, contingency plans for systemic distress), the COVID-19 pandemic places a premium on authorities' capacity to respond effectively to any distress that may emerge as exceptional measures are being phased out, and the long-term economic fallout becomes clear.

62. The GFC highlighted deficiencies in existing frameworks. They were primarily designed for the idiosyncratic distress of a financial institution. They were not sufficient to handle systemic financial crisis where many institutions or systemically important financial institutions (SIFIs, i.e., large and/or interconnected FIs whose distress could cause sizeable spillover effects to the rest of the system). Financial globalization also brought in cross-border spillovers and challenges to handle cross-border resolution of a FI with clearer roles set for home and host supervisors.

Developments Since the 2014 Review

63. Recent FSAP assessments have followed the substantially revised international standards. The FSB adopted the *Key Attributes of Effective Resolution Regimes for Financial Institutions* (KA), in 2011 and issued additional guidance in 2014. The KA set out the core elements of regimes that could enable authorities to resolve financial institutions in an orderly manner without exposing taxpayers to losses and while maintaining continuity of vital economic functions. The *Core Principles (CP) for Effective Deposit Insurance Systems*, revised in 2014, provide benchmarks for establishing or reforming deposit insurance schemes, covering governance, membership, coverage limits, funding modalities, and arrangements for quickly reimbursing insured depositors. The KA were designed to apply to both banks and non-bank financial institutions, using a modular approach to assessment. The IMF Board endorsed the inclusion of the Deposit Insurance Core Principles and KA in the Standards and Codes Initiative in 2011 and 2017, respectively.

64. While many jurisdictions have strengthened the resolution framework since the 2014 FSAP Review, less progress has been made in low-income and developing countries. Advanced economies have continued to align their bank resolution regimes with international standards and to enhance resolution planning for systemically important non-banks in train.

Still, further progress remains necessary to ensure that all G-SIBs can be effectively resolved, especially regarding the development of resolution funding strategies; frameworks for conducting valuations in resolution; continuity of access to FMIs; and the finalization of cross-border cooperation agreements.[12] Experience with bank failures in low income and developing countries since the 2014 Review has highlighted continuing weaknesses in the financial safety nets. The principles of proportionality should guide their design and implementation so that the reforms do not impose undue burdens on financial institutions and/or distort the functioning of financial markets (Nolte and Hoelscher, 2020).

The Next Five Years

65. Global safety net standards continue to evolve. In 2016, the FSB issued the Assessment Methodology for the Banking Sector, and the Board endorsed it for the purpose of undertaking graded assessments (IMF 2017a and b). In 2020, the FSB—in consultation with the International Association of Insurance Supervisors, WB, and IMF—developed an Assessment Methodology for the Insurance Sector, setting out essential criteria to guide compliance assessments of jurisdictions' insurance resolution framework against the Key Attributes (KA). Fund staff provided significant support in developing the methodology, including undertaking a pilot assessment as part of the 2019 France FSAP. As for deposit insurance, a comprehensive handbook was released by the International Association of Deposit Insurers in 2016, designed to provide additional guidance for assessing a jurisdiction's compliance with the Core Principles.

66. The Fund and the Bank intend to use the KA methodology as the assessment benchmark for insurance resolution frameworks in FSAPs and stand-alone standards assessments. Accordingly, the Board is asked to endorse the KA as they apply to assessment of insurance resolution regimes and the related assessment methodology, which will be used as the benchmark for reviewing insurance resolution regimes in the context of FSAP and stand-alone assessments—namely, the assessments conducted outside of FSAP—(see Proposed Decision [to be drafted by LEG]). The complexity of the standard—on top of the work associated with other elements of Pillar 3 of the FSAP—will place a heavy demand on staff. Therefore, careful prioritization and allocation of resources will be critical to ensure that full (graded) assessments of the observance of the KA, when undertaken, are appropriately resourced.

67. The COVID-19 crisis does not fundamentally change the desirable design of financial safety nets (IMF, 2020b). *Early intervention frameworks* allow supervisors to require prompt corrective actions and monitor emerging weaknesses. Corrective actions should be geared towards restoring capital and liquidity buffers and ensuring long-term viability while curbing excessive risk-taking. The COVID-19 crisis has given rise to substantial uncertainties over economic impact and recovery speed. Thus, supervisors may need to give more time for rebuilding capital and temporarily suspend automatic triggers for prompt corrective actions where relevant (see IMF 2020c). Similarly, initiating *bank resolution* may not always be

[12] Also see Evaluation of the effects of too-big-to-fail reforms (consultative paper), FSB, June 2020 and "2020 Resolution Report: be prepared, FSB, November 2020.

practicable while the pandemic continues because of, for example, operational challenges and high uncertainty over asset valuations. However, efforts to strengthen resolution regimes, improve operational capabilities and maintain up-to-date resolution plans should continue to ensure that authorities are ready to intervene if significant problems emerge after the removal of exceptional policy support. In addition, the operational readiness and capacity of *deposit insurance schemes* and *ELA frameworks* should be ascertained to ensure they can help underpin confidence and reduce contagion risks.[13]

COVERAGE OF CROSS-CUTTING ISSUES

A. Systemic Liquidity

68. Systemic liquidity assessments have become an increasing topic of interest in FSAP since the GFC. These analyses examine the risk that multiple institutions would simultaneously face liquidity difficulties. The main difference between institution-level and systemic liquidity risks is the amplification effect through interconnectedness in the whole financial system. Systemic liquidity risk differs across countries depending on financial system structures. In systems with well-developed money and capital markets, initial liquidity shocks to a part of the system could spill over to other institutions and markets. Behaviors, such as liquidity hoarding and asset fire sales, could amplify shocks. When financial markets are less developed, such as a system dominated by banks mostly funded by deposits, a system-wide liquidity shortfall could happen when there is a net aggregate outflow of liquidity from the whole system (for example in the case of external drains in the case of balance of payment shocks or domestic financial disintermediation when residents switch out of bank money).

69. For certain jurisdictions, systemic liquidity could be the central macrofinancial topic, closely related to Article IV consultation's external sector assessment. While systemic liquidity is the most evident type of systemic risk, major central banks have successfully mitigated the impact by providing ample liquidity in recent crises. The main policy challenges are establishing an adequate framework to monitor the origin and transmission channels of the risks and avoid the moral hazard problem of market participants. However, central banks in some jurisdictions—small open economies without reserve currencies (including advanced economies)—may not be able to mitigate aggregate FX liquidity shocks fully. Without additional private or official foreign funding, these central banks cannot play the lender of last resort function as their firepower is often limited to international reserves. These are indeed the economies subject to the assessment of reserve adequacy (ARA) of the Article IV consultation, where financial stability risk is considered one of the contributors to external balance distress.[14]

[13] Given the potential ML/TF risks when reimbursing insured depositors, adequate AML/CFT safeguards should be in place, including, effective coordination with relevant AML/CFT authorities, and active channels for cooperation and information sharing.

[14] See IMF, 2016, Guidance note on the assessment of reserve adequacy and related considerations. MCM has also developed a new tool to assess the impact of FX liquidity shock from the balance of payment stress to various economic sectors and their spillover to the financial system and the international reserves held by the central bank.

70. A systemic liquidity assessment spans the three pillars of a financial stability assessment. Pillar 1 examines vulnerabilities by type of institution (e.g., banks, asset managers, or potentially CCPs) or by activities (e.g., repo markets including all participants). Pillar 2 discusses prudential measures to prevent liquidity stress at the level of individual institutions (e.g., liquidity requirements to banks and investment funds) and at the system level (macroprudential requirements, if any). The robustness of FMI is another oversight issue. Pillar 3 covers liquidity support by central banks and its design (e.g., eligible collateral and lending terms), including cross-border backstops such as central bank swap arrangement for systemic FX liquidity shocks. Ideally, an assessment of systemic liquidity would include a qualitative and quantitative description of financial linkages of a system integrated with liquidity stress tests of systemically important segments (such as banks, mutual funds, and CCPs) or activity-based analysis in most relevant liquidity markets to the extent possible.

71. The depth of systemic liquidity assessments in FSAPs has varied, mostly reflecting data gaps and methodological challenges. Some assessments have focused on a description of core liquidity markets and their financial market infrastructures with a qualitative assessment of their vulnerabilities under stress based no which prudential and safety net recommendations have been made. Quantitative liquidity stress tests have focused on banks (and occasionally investment funds).[15] The nonavailability of needed extremely granular data and methodological challenges to model complex interconnectedness and main participants' behavior in an extreme stress scenario have limited the depth of coverage of systemic liquidity assessments in FSAPs.

B. Borrower Vulnerabilities and Distressed Asset Restructuring

72. The potential scarring effects of the pandemic are bringing renewed attention to nonperforming loan (NPL) management, which could be relevant for FSAPs in the near future.[16, 17] Borrower distress could become more visible as extraordinary support measures are gradually unwound requiring balance sheet workouts in the real and financial sectors. FSAPs may thus need to consider enhancing the supervision of asset quality--including asset quality reviews as needed--and reviewing frameworks for NPL restructuring given the possibility of a spike in the volume of distressed assets over the next few years. These are cross-cutting topics spanning regulation and supervision and corporate insolvency and enforcement of creditor right. FSAPS over the next years may need to address these topics given the high likelihood of large-scale balance sheet workouts in the non-financial sectors.

73. Experience suggests that coordination across multiple government agencies is needed to establish comprehensive NPL restructuring strategies at the national level. As shown in Figure 8, banks have five options for dealing with large stocks of NPLs. Their

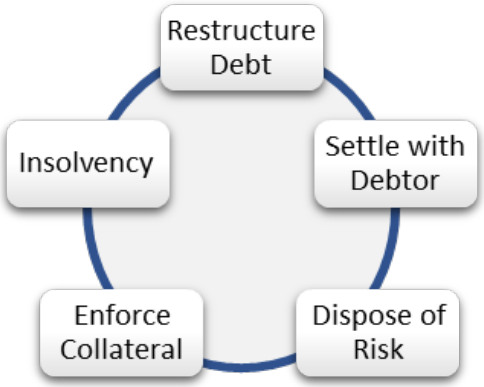
[15] Exceptions include 1) 2017 Luxembourg FSAP conducted detailed liquidity analysis of mutual funds, and Article IV examined the link between banks and mutual funds through deposits; 2) 2020 Philippines FSAP examined liquidity linkage between banks and nonfinancial corporations triggered by COVID-19 related earnings shocks.

[16] See "GFSR: Markets in the Time of COVID-19", April 2020 and "GFSR: Bridge to Recovery", October 2020.

[17] See, for example, recent FSAPs for France (2019), Italy (2020), Korea (2020) and the United States (2020).

effectiveness hinges on the legislative frameworks and institutional capacity. Therefore, country authorities have a role to play in pillar 2 and 3 areas, including (i) strengthening regulation and supervisory oversight; (ii) enhancing insolvency and creditor rights frameworks; and (iii) facilitating asset disposal (see IMF 2020b). Building on experiences gained in recent FSAPs, deep dives in these areas are likely to become more important in the post-COVID era.[18]

Figure 8. Options for NPL Resolution



- ***Supervision and regulation.*** To avoid moral hazard, supervisors need to ensure that loans are appropriately classified and provisioned, with particular attention paid to collateral valuation and the treatment of restructured loans. Banks should also be encouraged to write off uncollectible loans promptly before exhausting all legal remedies. Enhanced oversight of banks with high NPL levels can help foster timely action by requiring banks to develop bank-specific NPL resolution strategies and spurring the improvement of banks' internal capabilities for handling distressed assets—including via the creation of dedicated workout units. Reviews of supervisory and regulatory policies relevant for NPL resolution should be informed by and coordinated with financial sector oversight evaluations, as conducted through formal assessments such as the BCP.

- ***Insolvency and creditor rights.*** Effective NPL resolution requires an insolvency regime that enables the rehabilitation of viable firms and liquidation of nonviable ones and robust enforcement and foreclosure processes that help maximize recoveries (see IMF 2020d). Efficient insolvency and enforcement mechanisms can also incentivize borrowers and creditors to engage in meaningful out-of-court restructurings. Such restructurings can provide effective solutions for dealing with large numbers of over-indebted enterprises and households without overloading the judicial system. Reviews of insolvency regimes and frameworks for creditor rights can be conducted following the World Bank's Principles for Effective Insolvency and Creditor/Debtor Regimes and the comprehensive guidance on insolvency law from the United Nations Commission on International Trade Law.

[18] See, for example, technical notes on NPL resolution prepared for the 2017 Bulgaria and 2020 Italy FSAPs.

- ***Asset disposal.*** Timely disposal of distressed assets can facilitate balance sheet clean-up while supporting market efficiencies by involving specialized investors. The development of a distressed asset market typically hinges on reforms that seek to remove structural impediments (e.g., incomplete credit information, legal obstacles to asset transfers, a level regulatory and consumer protection playing field, unfavorable tax treatment) and improve the enforcement of creditor rights.

COVERAGE OF EMERGING ISSUES

A. Overall Considerations

74. Emerging risks such as those arising from climate change, cyber, and fintech are becoming increasingly important for financial stability. Central banks and financial regulators are paying increased attention to the implications of climate change for the stability of financial systems financial stability and opportunities for green investment. There have been intensified discussions and work programs in international fora such as the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Meanwhile, rapid advances in financial technologies are transforming the economic and financial landscape. The exponential growth in digitalization and interconnectedness of financial services and infrastructures has increased substantially the potential risks to financial stability from cyberattacks. And while Fintech can support potential growth and poverty reduction, it may pose risks to consumers and investors and, more broadly, financial stability, development, and integrity.

75. Tackling these emerging issues in FSAPs calls for a combination of approaches across the three pillars. Within Pillar 1, stress testing exercises could include scenarios of the impact of climate change and fintech over extended horizons. Pillar 2 may need to develop a comprehensive approach to address emerging challenges from climate change, cyber risks, and fintech based on new standards and guidance for these risks under consideration by SSBs as they become available.[19] In addition, increased role of fintech in payments and cyber risks mean that FSAP may need to examine more closely operational resilience of market intermediaries and FMIs.

76. Addressing emerging issues calls for collaboration and investing in human capital at the Fund. Climate change analysis will require collaboration with climate scientists and hazard risk specialists (such as catastrophe insurance experts) to correctly identify risks and transmission channels relevant for financial stability and assess their potential impact. In the case of cyber risks and fintech, there is a need to work with technology specialists and ideally security/law enforcement agencies, although collaboration has been limited so far. To address expertise limitations in the emerging areas, staff will need to continue working with external experts and broadening expert rosters. In addition to building expertise through hiring and close cooperation with World Bank Group, staff have been intensifying cooperation with other stakeholders on the emerging issues. Work on FSAPs could also benefit from cross-fertilization

[19] For instance, the FATF issued standards for virtual asset and virtual asset service providers in 2019.

of ideas and analysis from other Fund-wide workstreams, including on climate change, fintech (including digital money), and cyber risks.

77. Future FSAPs will need to strike a balance between traditional topics and emerging issues based on country circumstances. The pace of digitization of the financial sector and policy efforts to prevent, mitigate, and adapt to climate change will only increase over the next five years. The SSBs are making efforts to incorporate these new risks into their standards and guidance and there will be a need for FSAPs to adapt and develop approaches to evaluate practice. Analytical frameworks for assessing these risks across the globe are at an early stage but developing rapidly. Meanwhile, traditional macrofinancial risks and assessment of existing (and evolving) standards and codes will remain core topics. Given the resource constraints, FSAP teams will need to leverage the scoping process to prioritize the balance of considering emerging risks, leveraging the Risk Assessment Matrix to inform staff judgment. It will be important to take a forward-looking approach here given the rapidly evolving landscape and attendant material risks.

78. Pilot assessments offer a pragmatic approach in the near future. As discussed in detail below, recent FSAPs have covered some of emerging risks on a pilot basis, working with external experts in respective fields. Pilot cases are chosen based on the potential systemic importance of a given emerging risk in the country. Use of pilots has helped develop assessment techniques that could be used in future FSAPs and allowed deeper examination of these issues in relevant FSAPs. Gaining further pilot experience together with broader MCM and IMF/World Bank policy projects, technical assistance, flagships, and collaboration with the SSBs and other central banks and financial regulators, should allow FSAP teams to increase the coverage on these topics.

B. Climate Change Risk

79. Climate risk stress testing in FSAPs can help our members better understand potential pressure points for the financial system due to physical climate shocks and in the transition to a low-carbon economy. It will help inform policies needed to enhance risk management and the resilience of the financial system. Unlike conventional stress testing, climate risk stress testing is not focused on quantifying possible capital needs of financial institutions relative to regulatory minima.

80. There has been some discussion of risks associated with climate related issues already in past FSAPS.

- ***Risk analysis***: A textual analysis of 192 FSAP reports (up to 2019) found that 33 (17 percent) contained meaningful references to risk factors such as droughts, floods, and storms. Many of these are for small island states (such as the Bahamas, Jamaica, and Samoa), but some assessments for advanced economies (such as the United States, France, Belgium, Denmark, and Sweden) have also covered natural catastrophe risks as part of insurance stress testing. More recently, some FSAPs have piloted new approaches to incorporate climate change in bank stress tests (Norway on transition risk

and the Philippines on physical risk), while others discussed the risks without necessarily conducting stress tests.

- ***Oversight***: The oversight section of FSAP also started to cover climate issues. In the 2020 US FSAP, the regulatory response to the increasing incidence and severity of natural catastrophes was considered as part of the assessment of supervision and regulation of the insurance sector. Assessing progress with disclosure rules on climate change risk (for all types of firms) is another area. IMF staff are developing an approach to embed climate risk considerations in the review of supervision and regulation; this approach to climate risks will be pilot tested in upcoming FSAPs.

81. The approach to climate risk stress testing will require adaptations to the conventional approach to stress testing along several dimensions:

- ***Horizon***. Climate risk stress testing will consider financial stability risks at both the conventional medium-term (3-5 year) horizon and the long-term (30-50 year) horizon, given the nature of climate risks. The examination of both medium- and long-term climate risks is important, as many others in the field focus only on long-term risks.
- ***Nature of risks***. FSAPs will need to consider both physical and transition risks. In any given country, the scope of the analysis would be based on an assessment of each country's specific vulnerabilities.
- ***Scenarios for physical risk***. The highly micro-sectoral and geo-spatial sources of climate-related financial stability risks present important data and modeling challenges. FSAPs will need to draw on external expertise on physical risk and obtain granular data.
- ***Scenarios for transition risk***. The large uncertainties surrounding the carbon price path and associated spending of carbon tax proceeds present important modeling challenges. FSAP stress testing will need to assume a range of carbon price paths, from large up-front price increases to more gradual increases, drawing on approaches being used by leading central banks and leveraging models developed within the Fund and external experts, linking close to the approach of the NGFS.

82. FSAPs will need to leverage other climate work in the Fund, the Bank, and international fora. Staff are engaging with the NGFS for stress tests and supervision, and the Task Force on Climate related Financial Disclosures on the taxonomy of green assets as well as disclosure standards. Recent issues of the GFSR discuss the impact of climate change on asset prices and sustainable finance. Going forward, more effort will be needed on macroeconomic modeling[20] of climate change to build climate stress test scenarios and integration of discussions with the revised Climate Change Policy Assessment (CCPA) as well. Collaboration with the Bank could be particularly relevant for the jurisdictions with joint Bank-Fund

[20] Climate change—whether it is physical or transition risks—would have different impacts across economic industries (e.g., "brown" industries vs. "green" industries) and geography. Therefore, one would need to use economic models suited for analysis by industry, such as computational general equilibrium (CGM) models and global trade analysis project (GTAP) models. Currently, such models are not part of the Fund's macroeconomic modeling toolkit.

responsibilities. The cooperation is especially vital for building physical risk stress test scenarios, where expert knowledge on climate science and disaster models (e.g., catastrophe (CAT) risk models for cyclones and flood) related to Bank's work on disaster financing and insurance programs and sectoral expertise (e.g., agriculture, energy) would be salient. We will seek to extend climate risk analysis—including on materiality and, as relevant, physical and transition risk modeling—to more FSAPs, as feasible within the prospective resource envelope.

C. Cyber Risk

83. Financial systems are particularly vulnerable to cyberattacks, given the increasing reliance on information and communication technology (ICT). The "entry points" of attacks could be diverse, and an attack on a handful of firms could spread to the system quickly through both the ICT's interconnection and the inherent interconnectedness in the financial system. Cyberattacks can be systemic if they target several financial institutions simultaneously, a systemically important financial institution or market infrastructure. Spillovers may also come indirectly from attacks on ICT providers and physical infrastructures. Cyberattacks could also exacerbate an emerging financial crisis by propagating disinformation, undermining confidence, or disrupting safety nets. Direct and indirect cyberattacks to the financial system could stall payments and settlement transactions, liquidity crunch to banks, and mass insurance claims from the policies that cover the cyber risk, among others.

84. Coverage of cyber risks in FSAPs has been increasing. Some FSAPs have gathered descriptive information on cybersecurity practices through interviews (Namibia) and on potential losses from cyberattacks through questionnaires (Poland). There have been several pilot cases where FSAPs investigated the risks from Pillars 1 and 2 perspectives in depth. In addition, MCM has been providing workshops and technical assistances (TA) for emerging and developing economies by connecting the supervisors from these economies to extremal experts in the field and supervisors from more developed economies. MCM has also organized crisis management simulation exercises for some countries in collaboration with a major global bank and cybersecurity experts. These capacity development experiences could also help to develop in-house expertise and tools for FSAPs. The pandemic has further heightened concerns regarding cyber and operational resilience and led to the inclusion of these topics in the scope of forthcoming FSAPs.

85. Some FSAPs developed new approaches for quantitative risk assessment of cyber risks, despite data challenges. The Euro Area FSAP conducted a cyber risk-motivated liquidity stress test of banks, simulating a scenario assuming banks could not access collateral at CCPs. It exhibited a case where standard stress testing tools could be used to discuss cyber risks. The Singapore FSAP further broadened the types of cyber risk analyses, thanks to detailed data from authorities on cyberattacks. Also, banks provided cyber risk scenarios most impactful to themselves and associated loss estimates and management actions. These scenarios were used to develop an inventory of scenarios, and some were presented in a cyber RAM. Insurers were asked to estimate policy payouts if their significant policyholders were to experience cyberattacks. Data gap is a critical constraint. Cyber security breach data could be considered as national security information, raising the bar to access even more than standard stress testing

data. Publicly available data depends on voluntary reporting and often misses some information such as losses.

86. Developing regulation and supervisory processes are also essential, and two pilot FSAP exercises were undertaken in Norway and South Africa. The objective was to examine the potential systemic implications of cyber risk and policy actions to improve cyber resilience, focusing on the regulatory and supervisory framework using international best practices and guidance. The pilot exercises developed a cross-sectoral approach covering systemically important FMIs and banks. The United States FSAP also discussed cyber risk within financial oversight, including banks and FMIs. These exercises emphasized the need for strong collaboration with the authorities, given the sensitive subject matter and the need for ensuring sufficient confidentiality of the information provided by different authorities. Narrowing the scope of the analysis to systemically important FMIs and banks was crucial to understanding systemic vulnerabilities.

87. To clarify expectations of cyber risk coverage in FSAPs, staff proposes to amend the FSSA disclaimer. FSSAs include a disclaimer noting that FSAPs do not cover some categories of risk, such as operational, legal, and fraud risks.[21] While still broadly appropriate, the disclaimer could create confusion in some of the emerging areas, such as cyber risk, which could give rise to systemic risk. The wording could therefore be clarified to highlight the distinction between systemic risk (which financial stability assessments focus on) and idiosyncratic risk (which they do not necessarily cover).

D. Fintech

88. Rapid advances in "fintech" are transforming the financial landscape, offering opportunities but posing risks. Financial innovation has not only changed the nature of financial products and services but has also altered production processes and organizational structures. These changes offer benefits, but they are also introducing new risks, including potentially to financial stability. In addition to cyber risk, fintech also poses risks to established financial institutions through competitive forces, which may undermine their business models and require adaptation.

89. Fintech issues have already been covered in 13 assessments, with 5 ongoing FSAP missions focusing on fintech. The assessments have been primarily focusing on oversight issues so far. The World Bank has been discussing fintech from the perspective of improving access to finance, financial inclusion, financial development, and reducing the cost of retail payments, including cross-border payments. Quantitative analysis of financial stability risks from fintech is still at an early stage.

90. Fintech impacts financial sector oversight in many ways. FSAPs have approached the topic by integrating fintech elements into the existing components of the oversight pillar**.**

[21] The disclaimer reads, "FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs."

Regulators and supervisors are monitoring fintech developments to evaluate whether regulatory frameworks and supervisory processes need to be adapted given the often rapid changes occurring in the financial sector (such as by creating sandboxes, innovation hubs, enhanced monitoring, clarifying and adjusting existing regulations, and strengthening resources). Some authorities have amended the legal and regulatory framework for the new entities and services. The general objective has been to strike a good balance between allowing financial innovation and preserving financial stability and integrity and consumer protection. Pilot exercises have been conducted in some jurisdictions (e.g., Malta, Singapore, Switzerland, and United States) where rapid fintech developments and regulatory changes have been observed. With a focus on financial inclusion, the World Bank has included fintech in various development modules of FSAPs (such as India, Indonesia, South Africa, and Thailand).

91. The pilot experience highlighted some common challenges. These are (i) resource limitations given specific skills needed; (ii) lack of reliable data due to the existing regulatory perimeter; (iii) the importance of international cooperation due to the cross-border nature of fintech activities; and (iv) the need to further develop international standards in some areas. As emerging market and developing economies (EMDEs) are facing more rapid development of fintech and BigTech, there may be a higher demand from these authorities to include the analysis of fintech and BigTech in future FSAPs.

92. A few FSAPs have attempted to assess quantitative risks from fintech developments on a pilot basis. The 2019 Singapore FSAP took a multi-pronged approach. The national authority conducted bottom-up stress tests on capital and liquidity based on scenarios the participating banks considered the most relevant. Additionally, staff estimated potential gains from fintech by gauging the unit cost of financial intermediaries and the reduction of incumbent banks' noninterest income. Staff also discussed the desirability of the sandbox approach to encourage competition and innovation using an industrial organization model. The 2020 FSAP for Korea overlayed the effects of competition from fintech firms on banks' interest income and funding costs in the standard bank stress tests. The results critically depend on the extent of likely competitive pressures, as the market structure in the financial services sector evolves which hinges on the regulatory framework and market infrastructures for fintech firms (such as whether digital retail payment firms can access banks' payment networks or not).

93. Future analysis of fintech risks will need new frameworks and data sources to potentially assess efficiency-stability tradeoffs. Assessing the benefits and risks of fintech innovations calls for frameworks that can help model the incentives for financial innovation and risk-taking behavior for both incumbent institutions and entrants, the roles of market structure and government policies, and their overall mapping to increased efficiency and inclusion versus generation of financial stability and integrity risks. As noted by the FSB (2019), risks here are nascent in many sectors barring critical infrastructures such as for third party cloud service providers. Moreover, large data gaps persist reflecting in part the challenge of monitoring the activities of new fintech entrants as well as the role in finance of BigTechs. Developing frameworks and obtaining data on emerging activities are key challenges facing FSAPs to examine these new risks.

COORDINATION WITH THE WORLD BANK

94. In EMDEs, FSAPs are usually conducted jointly with the World Bank, except in the case of separate stability or development modules. World Bank staff participate in FSAPs in all countries that are members of the International Bank for Reconstruction and Development (IBRD, one of the five institutions of the World Bank Group), in addition to any other country in which the World Bank has a country engagement, even if there is no World Bank lending involved. In financial sector areas that have both stability and developmental aspects, the Fund and the World Bank take the lead in aspects of their responsibility. These cases often involve the appointment of two experts, one for each institution. For example, Basel Core Principles assessments in join Bank-Fund FSAPs have almost always been carried out by two experts, one for the Bank and one for the Fund.

95. The World Bank's role in FSAPs in EMDEs is critically important. Given the interplay between financial stability and development as well as the World Bank's role in nonbank sectors and emerging topics, such as fintech and climate finance, the involvement of the World Bank is extremely helpful. For these reasons, IMF-led FSAP stability modules in EMDEs tend to involve one or two World Bank staff or experts, and World bank-led FSAP development modules tend to include one or two IMF staff or experts. Even some advanced economy FSAPs included World Bank experts when relevant and feasible. Staff's analysis suggests that—controlling for factors such as financial sector size—joint FSAPs have been able to provide a broader scope.

96. In joint FSAPs, coordination with the Bank has been effective. The Fund mission chiefs share with the Bank mission chiefs the *FSAP Approach and Staffing Note* and the FSAP *Financial Stability Policy Note* (FSPN). A summary of the Bank's work plan should be included in both documents. The Fund mission chiefs and deputies always attend the pre-mission Bank review. Likewise, the Bank mission chief always participates in the FSPN review. The Fund mission chief also attends the Bank's review of the FSAP Aide-Mémoire. On specific World Bank matters, the FSAP mission chief consulted with the staff-level Secretariat of the joint Fund-Bank Financial Sector Liaison Committee (FSLC).

97. The FSLC coordinates the aspects of FSAPs that are conducted jointly. The FSLC, co-chaired by senior Fund and Bank staff, is an important vehicle for coordinating Bank-Fund work in financial sector issues, including the FSAP. Regarding the FSAP, the FSLC's principal focus has been the coordination of scheduling and procedures, but it has also been active in other areas. For example, it has been a forum for discussing issues raised by international standard-setters regarding standards and codes, approaches to quality assurance for the DARs and ROSCs, and special topics such as financial inclusion, climate change, fintech, and cyber risks (IMF, 2014a).

98. The FSLC also maintains rosters of external experts for joint FSAP assessments. The rosters comprise experts that have been certified by each institution in its area of specific responsibility and have been consented by the FSLC. In the areas of Fund responsibility, the experts are certified by relevant MCM divisions.

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