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THE WORLD BANK

The Financial Sector Assessment Program After Ten Years: Background Material

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Contents Page

Tables

Figures

Appendix

GLOSSARY

BCP	Basel Core Principles for Effective Banking Supervision
CCA	Contingent Claims-Based Approach
CPSS	Committee on Payment and Settlement Systems
EU	European Union
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSLC	Financial Sector Liaison Committee
FSSA	Financial System Stability Assessment
GFSR	Global Financial Stability Report
IAIS	International Association of Insurance Supervisors
IEG	Independent Evaluation Group (World Bank)
IEO	Independent Evaluation Office (IMF)
IOSCO	International Organization of Securities Commissions
LEMs	Large Emerging Market Economies
LTGD	Loss Given Default
MA	Major Advanced
OA	Other Advanced
OEMs/DC	Other Emerging Market Economies and Developing Countries
PD	Probability of Default
ROSC	Report on the Observance of Standards & Codes
SBA	Stand by Arrangement
WEO	World Economic Outlook

I. Performance of the FSAP in the Current Financial Crisis[1]

This is an independent review prepared by an external consultant. Although the consultant had frequent interactions with staff during the preparation of this review, the views expressed here are his own and do not necessarily reflect the views of the staff of the World Bank or the International Monetary Fund.

A. Introduction

1. **The Financial Sector Assessment Program (FSAP) was established ten years ago, largely in response to the financial crises of the 1990s.** These episodes differed from earlier crises in that their origins lay largely in the financial sector, as opposed to the macroeconomic imbalances that were at the root of the Latin American crises of the 1980s. The FSAP was one of several steps taken by the international community to reduce the likelihood of financial sector crises in the future, as well as to reduce the severity of such crises when, inevitably, they did occur. It was designed to enhance the resiliency of national financial sectors by helping national authorities to identify financial sector weaknesses and by recommending actions to address those weaknesses.

2. **The objective of this paper is to consider—with the benefit of still incomplete hindsight—how the FSAP has performed in the context of the current financial crisis.** In particular, the paper examines whether the FSAP helped in identifying vulnerabilities and risks and giving appropriate warnings and policy advice, where needed. The paper looks at the country coverage of the FSAP, the topics covered in the assessments, and how they were adapted as the crisis developed. The paper also examines the extent to which the risks were identified consistently and candidly. Finally, the paper looks at whether the country authorities were meaningfully engaged, and how this influenced follow-up actions.

3. **The analysis is based on a sample of countries that have had FSAPs in recent years, and were deemed vulnerable to the crisis according to certain indicators, including their need for an IMF Stand-By Arrangement.** To provide a more diverse set of experiences with respect to regions and the level of financial sector sophistication, the sample also includes several countries that are deemed non-systemic, but have participated in the FSAP (Table 1). The analysis focused mainly on the IMF's Financial Sector Stability Assessments (FSSAs) prepared by staff for the IMF Board.[2] The analysis was complemented by discussions with team leaders.

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[1] Prepared by Larry Promisel, consultant.

[2] These reports cover stability issues in more depth than the World Bank's Financial Sector Assessments (FSAs).

Table 1. Performance of the FSAP: Countries Included in the Review[3]

Country	Date of Mission	Date of FSSA	Date of IMF SBA
Countries currently with IMF stand-by arrangement:[4]			
Guatemala	10/05	1/07 U (2001)	4/09
Costa Rica	11/07	2/08 U (2001)	4/09
Mongolia	10/07	9/08	4/09
Romania	11/08	1/09 U (2003)	3/09
Armenia	3/05	5/05 U (2001)	3/09
Belarus	9/08	1/09 U (2004)	1/09
El Salvador	2/04	12/04 U (2001)	1/09
Serbia	4/05	1/06	1/09
Latvia	3/07	6/07 U (2001)	12/08
Pakistan	9/08	1/09 U (2004)	11/08
Ukraine	7/07	5/08 U (2002)	11/08
Iceland	6/08	8/08 U (2003)	11/08
Hungary	3/05	5/05 U (2000)	11/08
Georgia	2/06	2/07 U (2001)	9/08
Other countries:[5]			
Dominican Republic	2/09	2/09[6] U (2001)	
Honduras[7]	10/07	1/09 U (2003)	
Estonia	2/08	1/09 U (2000)	
South Africa	5/08	8/08 U (2000)	
Russia	10/07	7/08 U (2003)	
Kazakhstan	3/08	6/08 U (2004)	
Austria	12/07	5/08 U (2003)	
Lithuania	11/07	4/08 U (2002)	
Canada	9/07	1/08 U (2000)	
Switzerland	11/06	5/07 U (2001)	
Turkey	3/07	5/07	
Poland	5/06	9/06 U (2001)	
Ireland	3/06	7/06 U (2000)	
Spain	11/05	5/06	
Mexico	3/06	8/06 U (2001)	
Greece	5/05	11/05	
Trinidad & Tobago	5/05	10/05	

Sources: FSSAs and IMF external website.

[3] A "U" indicates that the assessment was an Update of the initial assessment; the year of the initial assessment is shown in parentheses. If there was more than one FSAP mission—as is typical in initial assessments—the "date of mission" shown for the second, or main, mission.

[4] Countries are listed in chronological order, based on the effective date of the Stand-by Arrangement (SBA).

[5] Countries are listed in chronological order, based on the date the FSSA was issued (not the Board date).

[6] The FSSA for the Dominican Republic has not been finalized.

[7] Honduras had an IMF stand-by arrangement, with an effective date of April 2008, but that arrangement expired.

B. Key Findings

4. **The FSAP has so far played a constructive role in the context of the crisis**, **but it has some limitations.** Recent FSAPs have been effective in terms of identifying risk exposures and pointing to actions that at least mitigated the consequences of the global crisis for some countries. However, the program in its current form has limitations, which limit the role it can play in the context of a rapidly developing crisis.

5. **While country coverage under the FSAP has been broadly appropriate, it has been affected by resource constraints and the voluntary nature of the program.** Around 80 percent of the members have had at least one assessment, including most of the countries that are vulnerable to global (as distinct from solely national) financial crises. Nevertheless, resources limit the total number of assessments that can be undertaken in any one year, and the frequency of assessments for any given country. In addition, because the program is voluntary, not all systemically important countries had been covered before the onset of the crisis. The United States, China, and Indonesia are notable examples.

6. **Overall, assessments covered the right topics in the run up to the crisis, and in many cases, suitable scoping adjustments were made as the crisis unfolded.** Most of the factors that were identified ex post as common sources of risk, such as liquidity and external funding, were indeed examined in all of the FSAP assessments. Where special risks were present, they were also identified to some extent. However, these issues were not always covered in sufficient depth.

7. **In some instances, although the FSSAs pointed to the right vulnerabilities, the recommendations and their implementation came somewhat late.** Timely action would have required higher assessment frequency than was possible under the program. Some specific problems that emerged rapidly during the crisis could not have been foreseen in advance, underlining the need for more frequent assessments or complementary instruments, including off-site monitoring and regular surveillance in the context of Article IV consultations.

8. **To a certain extent, the assessment of risks was hindered by a lack of systematic integration of forecasts and assumptions related to exogenous elements.** In particular, and importantly, in light of the current crisis, developments elsewhere in the region or the world and crosscutting issues associated with the global crisis, although mentioned, were rarely fully integrated into the assessment.

9. **In addition, even where the vulnerabilities and possible remedies were identified, this was not always done with sufficient specificity, clarity, or candor, and often the recommendations were not sufficiently forceful.** Reports tended to attempt to strike a balance between the negative and the positive statements, which sometimes blurred the

message. Key messages were sometimes obscured and not highlighted in the executive summary.

10. **The degree to which authorities were engaged in the FSAP process varied across countries and influenced the implementation of recommendations.** Factors that enhanced the likelihood of implementation include: the underlying commitment of the authorities to strengthen their financial systems; the quality of the dialogue between the assessment team and the national authorities, which may extend well beyond the FSAP mission; the actual onset of a crisis, which tends to increase the urgency for implementation; and in some cases, IMF programs or World Bank loans that incorporate the recommendations.

11. **Based on these findings, the paper recommends some steps to make the FSAP more effective and responsive in the future, including:**

- Greater flexibility to facilitate more frequent, relatively focused assessments, as warranted, for the evaluation of near-term stability concerns or to address specific reform needs.

- Complementing on-site assessments with enhanced off-site monitoring and analysis.

- Better integration and mutual reinforcement of bilateral and multilateral elements, in particular by embodying in assessments more systematically and consistently crosscutting issues analyzed in other contexts, and vice versa.

- More awareness of cross-country risks and spillovers, with the analysis of external risks undertaken by expert staff in the IMF and World Bank and in other, cooperating international bodies, including the Financial Stability Board.

- Greater attention to highlighting analytical insights or special features in FSAP reports, to help promote comparability across assessments, and facilitate cross-country analyses.

- Increased efforts to enhance the degree of clarity and candor in the assessments.

- Better knowledge management to make the lessons learned more accessible to both staff and private analysts.

C. Did the Right Countries Participate in the FSAP?

12. **Participation in the FSAP is voluntary but country coverage has been broad.** Nearly all the countries most vulnerable to global crises have been assessed under the program. As at end-June 2009, over two-thirds of the membership had participated in the program, and many had had more than one assessment. Three notable exceptions are the

United States, China, and Indonesia, although assessments are in the preparatory stages for all three.[8]

13. **The program has played a particularly prominent role in emerging markets.** Table 2 shows 39 emerging markets for which a number of macro and financial indicators point to areas of concern: 18 of them[9] have participated in the FSAP at least once, and FSSAs for 13 of them were prepared in the past three years.[10]

14. **Similarly, most of the countries that have recently requested an IMF Stand-By Arrangement—an indicator that the country is facing problems—have had FSAPs over the past three years.** Of all the countries that had Stand-By Arrangements as of June 1, 2009, Seychelles is the only one that had not participated in the FSAP. Table 1 shows the countries reviewed for this note. With the exception of Georgia, the problems facing most of the countries with SBAs are associated directly or indirectly with the current financial crisis or its side effects.[11]

15. **The high rate of participation among countries vulnerable to financial turbulence is not a coincidence.** Generally, more countries volunteer for assessments than the program can accommodate in any given year, so requests are prioritized according to well-established criteria.[12] The Boards of the IMF and the Bank made clear at the outset that the most important consideration would be the "systemic importance" of the country. Although they also stressed the need to devote resources to countries that needed help strengthening their provision of financial services to promote sustained growth, the decision to give priority to systemic concerns, combined with peer pressure, has ensured participation of most systemically important or vulnerable countries.[13]

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[8] The FSAP is not the only instrument for financial sector assessments. Off-site monitoring and Article IV consultations provide opportunities to address specific issues deemed appropriate by IMF staff.

[9] Bulgaria, Croatia, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Turkey, Ukraine, Kuwait, United Arab Emirates, Nigeria, South Africa, and Korea.

[10] Bulgaria, Croatia, Czech Republic Estonia, Kazakhstan, Latvia, Lithuania, Romania, Russia, Turkey, Ukraine, United Arab Emirates, and South Africa.

[11] Gabon, has also participated in the program (FSSA in 2001), but its Stand-By Arrangement and FSAP, both predate the current crisis.

[12] See Section II of the main paper.

[13] The planning process is conducted by the Financial Sector Liaison Committee (FSLC) (See main paper).

Table 2.Macro and Financial Indicators in Selected Emerging Market Countries

	Current Account Balance 2/ (Percent of GDP)	External Debt Refinancing Needs in 20093/ (Percent of reserves)	Net External Position vis-à-vis BIS-Reporting Banks 4/ (Percent of GDP)	Average Real Credit Growth over the Last 5 Years 5/ (Percent, year-on-year)	Loan/ Deposit 6/ (Ratio)	Forex Share of Total Loans (Percent of Total Loans)
Europe						
Bulgaria	-12.3	132	-34.9	35.9	1.3	66.9
Croatia	-6.5	136	-44.5	13.1	1.1	62
Czech Republic	-2.8	89	-13.1	16	0.8	13.6
Estonia	-6.3	346	-68.8	27.3	2.1	85.3
Hungary	-3.9	101	-50.2	14.3	1.4	65.7
Kazakhstan	-6.4	82	-5.1	50.1	1.7	43.6
Latvia	-6.7	331	-57.6	38.4	2.8	89.3
Lithuania	-4	204	-41.5	43.2	2	64
Poland	-4.9	141	-15.4	14.7	1.1	32.6
Romania	-7.5	127	-32.5	47.1	1.3	55.5
Russia	0.2	34	3.1	34.5	1.3	15.3
Serbia	-12.2	...	-12.2	26.2	1.2	68
Turkey	-1.1	110	-11.9	29.8	0.7	28.9
Ukraine	0.6	117	-10.3	47.5	2	59.5
Gulf States						
Kuwait	25.8	109	3.8	19.8	1.1	...
Saudi Arabia	-1.8	…	22.3	22.2	0.9	8.2
United Arab Emirates	-5.6	…	-12.2	...	1.2	18.9
Africa						
Egypt	-3	14	8.5	0.9	0.6	28
Ghana	-10.9	13	-5	26.4	0.8	...
Nigeria	-9	...	10.3	34.2	1.1	...
South Africa	-5.8	49	4.4	12.8	1.2	...
Uganda	-6.2	…	...	17.7	0.8	...
Asia						
China	10.3	14	0.7	11.3	0.8	...
India	-2.5	33	-8.9	18.2	0.8	...

	Current Account Balance 2/ (Percent of GDP)	External Debt Refinancing Needs in 20093/ (Percent of reserves)	Net External Position vis-à-vis BIS-Reporting Banks 4/ (Percent of GDP)	Average Real Credit Growth over the Last 5 Years 5/ (Percent, year-on-year)	Loan/ Deposit 6/ (Ratio)	Forex Share of Total Loans (Percent of Total Loans)
Indonesia	-0.4	73	-7.5	15.1	0.8	19.8
Korea	2.9	93	-18.9	6.3	1.2	8.5
Malaysia	12.9	23	-8.3	5.2	0.9	...
Pakistan	-5.9	28	2.4	13.5	0.7	...
Philippines	2.3	39	-2.2	...	…	...
Thailand	0	34	1.3	2.6	1	...
Vietnam	-4.8	8	-7.4	26.4	1.1	21.2
Latin America						
Argentina	2.3	85	2.5	14.6	0.7	15.8
Brazil	-1.8	40	-7.1	15.9	0.8	...
Chile	-4.8	119	-7.2	11.6	1.4	...
Colombia	-3.9	52	0.5	16	2	6.3
Mexico	-2.5	64	-2.1	11.7	0.8	11.6
Peru	-3.3	27	-2.2	8.2	0.9	57.5
Venezuela	-0.4	59	19.7	45.8	0.8	<0.5

Source: GFSR.

Were the appropriate topics covered in the assessments?

16. **Overall, the assessments in the run up to the crisis covered the right topics, although not always in the same way or with equal depth in all countries.** The topics deemed ex post to have been relevant in the context of the current crisis vary according to the particular features of the country's economy and its financial sector.[14] This is especially true for advanced countries, where the breadth and degree of sophistication of financial sectors dictate a greater degree of selectivity. For emerging market economies, areas of particular concern extend to current account balances; external debt refinancing needs; net external positions vis-à-vis banks; real credit growth; loan to deposit ratios; and share of total loans denominated in foreign currencies. These factors should have been addressed—and indeed were addressed in all assessments of emerging market economies. In low-income countries, the effects of the financial global crises have been felt mainly in global aggregate demand, trade, and commodity prices (including energy prices), rather than in domestic financial systems. Forecasting, or even analyzing, these factors is not the role of the FSAP.

What did the assessments cover well?

17. **Despite the differences, some broad conclusions can be drawn about which areas were covered best, based on the sample of FSSAs reviewed**.

18. **Key macroeconomic issues, including real growth, inflation, and external imbalances were covered in all the assessments, and provided adequate background for the assessment.** Generally, the discussion was brief, serving not as the focus of the report but as relevant background to an analysis of the financial sector. Issues related to exchange rates—both the exchange rate regime and the level of exchange rates—were also mostly covered, depending on the country, as were macroeconomic and financial policies. However, nonfinancial sectors—households and corporations—were approached less consistently. Relevant aspects of those sectors, such as their current and prospective financial condition, were nevertheless discussed in the context of banks' exposures and other topics.[15] The global macroeconomy was typically not discussed, nor were developments in neighboring countries or those with which the country being assessed has major economic relations.

19. **The banking sector—the largest sub-sector—invariably received the bulk of attention.** This is appropriate from the perspective of near-term stability and vulnerabilities, if not necessarily from the longer-term perspective of providing efficient, inclusive financial

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[14] The appropriate scope of the assessment also varies depending on whether it is an initial assessment or an update. Thus, in many cases, full ROSCs were not undertaken in the context of Updates.

[15] A particularly useful discussion of the financial exposures of the household and nonfinancial sectors was included in the Romania FSSA.

services. In addition to analyzing the structure, assessments covered factors that underlie bank soundness, such as capital, liquidity, credit quality (non-performing loans and provisioning), earnings and profitability, and competition. The assessments were not just backward looking, but also emphasized exposures and risks that could generate problems in the future and the extent to which banks are in a position to manage the risks. As shown in Table 3, funding liquidity risks were covered in two-thirds of the FSSAs, and in all but one since mid-2006. In some cases, the assessment of the banking system's capacity to manage risk covered a wide range of considerations, including governance and internal controls and accounting. However, the crisis suggests that in many instances, FSAPs did not provide a sufficiently nuanced or comprehensive review of the potential liquidity risks in the system: in many cases, they offered a simple review of the liquidity management instruments of the central bank.

20. **The organization of financial supervision and regulation was also adequately covered in most reports.** The emphasis tended to be on banks, but not to the exclusion of capital markets and insurance. A BCP assessment was generally part of the initial FSAP, with a reassessment in 80 percent of the updates (Table 4). A prioritized set of recommendations was offered to address gaps in observance of those principles. Even where a BCP assessment was not undertaken, bank supervisory and regulatory practices were always examined. Importantly, from the perspective of financial vulnerabilities, the analysis of bank supervision and regulation drew on the analysis of the condition and exposures of the banking system itself; recommendations were offered to strengthen oversight of vulnerabilities that had been identified and were deemed most urgent.

21. **Coordination with foreign supervisors was assessed in more than 60 percent of the cases reviewed, where the foreign bank presence was high, or where foreign operations of domestic banks were important.** This generally covered the relationship with supervisors of parent banks, as in the Baltics, as well as cooperation among supervisors within a region, as in Costa Rica and El Salvador.

22. **The supervision and regulation of nonbank financial institutions was considered in three-quarters of the assessments, but to a lesser extent than for the banking sector.** Formal assessments of compliance with one or more of the international standards for oversight of securities markets, insurance, and payments systems were undertaken in less than half of the countries (Table 4.)[16]

[16] Regulation of hedge funds was addressed in one case (Switzerland).

Table 3. Performance of the FSAP: Coverage of Selected Issues A

Country and Date of FSSA		Liquidity Risks	Crisis Preparedness	Bank Resolution	External Funding Risks
Dominican Republic	2/09	Yes	Yes	Yes	Yes
Pakistan	1/09	Yes	Yes	Yes	Yes
Romania	1/09	Yes	Yes	Yes	Yes
Honduras	1/09	Yes	Yes	Yes	Yes
Belarus	1/09	Yes	Yes	Yes	Yes
Estonia	1/09	Yes	Yes	Yes	Yes
Mongolia*	9/08			Yes	Yes
South Africa	8/08	Yes	Yes	Yes	Yes
Iceland	8/08	Yes	Yes	Yes	Yes
Russia	7/08	Yes		Yes	Yes
Kazakhstan	6/08	Yes	Yes	Yes	Yes
Ukraine	5/08	Yes	Yes	Yes	Yes
Austria	5/08	Yes	Yes		
Lithuania	4/08	Yes	Yes	Yes	Yes
Costa Rica	2/08	Yes	Yes	Yes	Yes
Canada	1/08	Yes	Yes	Yes	
Latvia	6/07	Yes	Yes	Yes	Yes
Switzerland	5/07	Yes	Yes		
Turkey*	5/07			Yes	
Georgia	2/07	Yes	Yes	Yes	Yes
Guatemala	1/07	Yes			
Poland	9/06				
Mexico	8/06		Yes	Yes	
Ireland	7/06	Yes			
Spain*	5/06			Yes	Yes
Serbia*	1/06				Yes
Greece*	11/05		Yes	Yes	
Trinidad & Tobago*	10/05		Yes		
Hungary	5/05		Yes		Yes
Armenia	5/05			Yes	
El Salvador	12/04	Yes			Yes

Source: FSSAs.

Notes: * denotes initial assessment; others are updates.

Table 4. Coverage of Selected Standards and Codes[17]

Country and Date of FSSA		BCP	IOSCO	IAIS	CPSS
Guatemala	1/07	Yes			Yes
Costa Rica	2/08	Yes			
Mongolia*	9/08	Yes			
Romania	1/09	Yes	Yes		
Armenia	5/05	Yes			
Belarus	1/09	Yes			
El Salvador	12/04	Yes			
Serbia*	1/06	Yes			Yes
Latvia	6/07	Yes			
Pakistan	1/09				
Ukraine	5/08	Yes			
Iceland	8/08	Yes			
Hungary	5/05	Yes	Yes	Yes	Yes
Georgia	2/07	Yes			
Dominican Republic	2/09	Yes			Yes
Honduras	1/09	Yes			
Estonia	1/09	Yes			
South Africa	8/08		Yes		
Russia	7/08	Yes			
Kazakhstan	6/08				
Austria	5/08				
Lithuania	4/08				
Canada	1/08	Yes	Yes		Yes
Switzerland	5/07	Yes			
Turkey*	5/07	Yes	Yes		Yes
Poland	9/06	Yes	Yes	Yes	Yes
Mexico	8/06	Yes	Yes		
Ireland	7/06	Yes	Yes	Yes	Yes
Spain*	5/06	Yes	Yes		Yes
Greece*	11/05	Yes	Yes	Yes	
Trinidad & Tobago*	10/05	Yes			Yes

Source: FSSAs.

Notes: * denotes initial assessment; others are updates. BCP: Core Principles for Effective Banking Supervision. IOSCO: Objectives and Principles of Securities Regulation. IAIS: Insurance Core Principles. CPSS: Core Principles for Systemically Important Payment Systems.

[17] Does not include detailed assessments produced as technical notes.

What could have been done better?

23. **It is clear, with hindsight, that there are a number of issues that were addressed insufficiently or not at all in FSAP assessments, which have been important in the context of the current crisis.**

24. **Although the soundness of the banking system was covered in all cases, some important issues were not reviewed in depth.** The banking soundness analysis was generally extensive, drawing on a wide range of analytical tools, including *inter alia* financial soundness indicators, market-based indicators, and stress tests. Given what we now know about the difficulties associated with asset securitization, commercial paper, and short-term funding markets, those issues should have been examined in greater depth especially in advanced countries. Moreover, elements of the banking liquidity analysis were spread out over many parts (central bank operations, BCPs, stress tests), and not sufficiently integrated to provide a clear overview of the risks.

25. **Crisis management and safety nets were covered to some extent in most FSSAs, but were not always given sufficient prominence.** The recent turbulence has made clear that crisis preparedness should have been given greater emphasis in all assessments, regardless of the level of sophistication of the financial system. Central bank provision of liquidity in emergency situations (lender of last resort arrangements) and deposit insurance were evaluated as part of all assessments. However, explicit consideration of arrangements for the resolution of weak banks was not covered in around a third of the cases (Tables 3 and 5). Inadequacies in the judicial system were typically not addressed in the FSSAs reviewed for this paper. But more recent assessments addressed other legal and institutional aspects, including contingency planning, the framework for resolving failing institutions, and the potential for coordination and information exchange in crisis situations.

26. **Aspects of capital markets were discussed in every FSSA, but some issues that should have been covered in more advanced countries—such as asset securitization, commercial paper, and short-term funding markets—were not routinely covered.** Typically, there was a reference to the size of equity markets and the volatility of equity prices. Markets for government securities were sometimes discussed, although often without the associated matter of public sector debt management. Markets for corporate bonds were sometimes mentioned. The framework for regulation and oversight, and perhaps also securities settlement issues, was also discussed in many cases. The FSSAs for relatively advanced countries (Austria, Canada, Ireland, South Africa, Spain, and Switzerland) show that the coverage of issues was uneven. For instance, the asset-backed commercial paper market experienced serious problems in Canada in 2007, and was appropriately discussed in depth in the FSSA (dated January 2008). Funding liquidity was highlighted in Ireland (July 2006) and South Africa (August 2008). As a notable example, the Ireland FSSA (page 16), said that “Irish banks’ exposure to capital market funding, at 30 percent of assets, is among

the highest in the EU" and went on to point out that such funding is more sensitive to confidence than deposits and therefore is a less stable source of funding in times of stress. The Switzerland FSSA (May 2007) pointed out in a special box on systemic risk (on page 14) that large Swiss banks were active traders in OTC derivatives and that a disruption of market liquidity could expose them to trading losses and sharply compressed earnings; overall, however, the Switzerland FSSA did not come out with strong warnings. Securitization was not typically discussed, notwithstanding its relevance to the current crisis.[18]

27. **In most of the cases where the under-development of nonbank institutions or markets, including securities markets, were discussed (about 60 percent), the under-development was not explicitly recognized as a potential source of instability.** Nonbank institutions and markets were not portrayed as a safety valve for funding in the event of problems in the banking system. There were only a few exceptions where this aspect of the desirability of strengthening nonbank institutions or markets was highlighted, such as in Kazakhstan, Serbia, and Turkey.

28. **Crosscutting issues were rarely taken into account.** Many of the topics that currently are the focus of attention by financial experts and policymakers are not specific to individual countries, but instead cut across national markets. Such topics include asset valuation issues, especially in the context of mark-to-market accounting in the face of markets that are not functioning properly; funding liquidity problems associated with an unexpected spike in global risk aversion; or the feedback onto the financial system from a global recession. However, such issues extend beyond the scope of a bilateral instrument like the FSAP and are best addressed by multilateral instruments, such as the GFSR. For example, it is not clear that the analytical approach typically employed in the FSAP would have identified the sub-prime problems or valuation issues and risks associated with structured credit products in the United States, although rapid growth of mortgages, associated with more generous terms, might have been noted.

29. **Observance of compliance with standards other than the BCP was not systematically undertaken**, but this is in line with Board-mandated efforts to streamline and better focus and contain the costs of the FSAP process, which has resulted in a decline in the number of formal standards assessment since FY 2002.

To what extent did the scope of FSAPs adjust to the unfolding crisis?

30. **FSAP missions undertaken since the onset of the crisis did, nevertheless, attempt to adapt the scope of their assessments to include issues relevant to the crisis, including**

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[18] The Mexico FSSA included a good discussion of a range of issues associated with derivatives.

liquidity risks, crisis preparedness, bank resolution, and external funding risks.[19] Table 3 clearly shows that FSSAs prepared since the onset of the crisis in mid-2007 have covered the four key issues more often than was the case for the earlier FSSAs. In retrospect, these issues should have been given more emphasis earlier.

31. **The coverage of some other issues that have gained prominence during the ongoing financial crisis may also have been influenced by other factors.** For instance, the increased coverage of cross-border supervision and regulation was probably motivated by other factors in countries that host foreign banks with a substantial role in the national banking system. This is the case for example in the Baltics and in Eastern Europe more generally. It is also true for Austria and Switzerland, whose banks have major operations in other countries, and in Costa Rica and El Salvador, where formal steps have been taken to enhance cooperation among supervisors within the region. Coverage of such other issues shows less of a pattern than for the key issues mentioned above (Table 5), indicating that factors other than timing may have mattered more.

D. Were Risks Identified Consistently?

32. **Although the FSAP process is based on well-established analytical approaches embodied in the Financial Sector Assessment Handbook, their application is not sufficiently consistent to allow meaningful comparisons between countries.** Apart from the systemic liquidity assessments, the analysis is most systematic for the banking sector. The assessment of standards using internationally recognized BCP methodology is complemented by a reading of FSIs and stress testing. However, there are some areas that are approached in a more ad hoc way. The treatment of vulnerabilities associated with elements of the financial system other than banks—areas such as securities markets, payments systems, or government debt management—is less systematic and more dependent on the specific risks in individual countries.[20]

33. **Stress test were undertaken in all the FSAPs reviewed but, overall, did not provide significant insights regarding the crisis.** The methodologies used in the assessments varied according to the availability and quality of the data necessary to undertake the tests, as well as the nature and degree of complexity of the financial system,

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[19] A decision to show issues as having been covered is to some extent subjective; it requires more than just a fleeting reference. It is certainly the case that, even for the issues shown as covered, the depth, breadth, and prescience of the discussion in the FSSAs vary greatly across issues and across FSSAs. Nevertheless, the evidence in Tables 3 and 5 supports the conclusion above.

[20] The Turkey FSSA includes an unusually good discussion of public sector debt management.

Table 5. Performance of the FSAP: Coverage of Selected Issues B

Country and Date of FSSA		Cross-Border Sup. & Reg.	Housing Finance	Legal Infrastructure	Accounting & Auditing
Dominican Republic	2/09	Yes		Yes	Yes
Pakistan	1/09				
Romania	1/09	Yes			
Honduras	1/09				
Belarus	1/09			Yes	Yes
Estonia	1/09	Yes	Yes		
Mongolia*	9/08		Yes	Yes	Yes
South Africa	8/08		Yes		
Iceland	8/08	Yes	Yes		
Russia	7/08	Yes		Yes	Yes
Kazakhstan	6/08	Yes			
Ukraine	5/08	Yes		Yes	
Austria	5/08	Yes			
Lithuania	4/08	Yes		Yes	
Costa Rica	2/08	Yes		Yes	Yes
Canada	1/08	Yes	Yes		
Latvia	6/07	Yes		Yes	
Switzerland	5/07	Yes			Yes
Turkey*	5/07	Yes	Yes	Yes	
Georgia	2/07			Yes	Yes
Guatemala	1/07		Yes	Yes	Yes
Poland	9/06	Yes		Yes	
Mexico	8/06	Yes	Yes		
Ireland	7/06		Yes		
Spain*	5/06		Yes		Yes
Serbia*	1/06	Yes		Yes	Yes
Greece*	11/05			Yes	Yes
Trinidad & Tobago*	10/05	Yes			
Hungary	5/05		Yes	Yes	
Armenia	5/05		Yes	Yes	
El Salvador	12/04	Yes		Yes	Yes

Source: FSSAs.
Notes: * denotes initial assessment; others are updates. Issues associated with legal infrastructure referred to in this table are in addition to those issues dealing directly with resolution of weak banks, which are referenced in Table 3.

and the sophistication of supervisory staff. A separate paper (Chapter II) discusses the stress testing experiences in more detail, but the two analyses concur on a few broad conclusions:

- In some cases, the specified shocks were not sufficiently severe compared with the shocks that emerged in the crisis. This, in part, reflects the sensitivity of national authorities to what they deem to be overly severe scenarios that might trigger runs on banks. It also reflects assessors' difficulty in imagining severe scenarios.

- Some of the stress tests performed in the run-up to the crisis missed important sources of instability, such as exposures to liquidity risk, concentration of exposures in the real estate market, and exposures to off-balance sheet vehicles. The results typically suggested that credit risk is the biggest risk—not a surprise to any banking analyst—and that the banking system is resilient and able to absorb the shock, albeit with a deterioration in capital levels, often with some banks facing significant capital shortfalls.

- In many cases, stress tests were hampered by a lack of adequate data, in particular in relation to off-balance sheet exposures. Data issues were cited in many cases as sources of concern. The Guatemala FSSA expressed the issue very clearly (page 5): "Insufficient transparency and the poor quality of information [are] an overarching vulnerability of the financial system that constrains the adequate measurement of risks, hampers effective supervision, and constrains access to credit."

- Cross-border issues and the risk of contagion from problems elsewhere did not receive sufficient attention. To some extent, the assessment of risks is dependent on the forecasts or assumptions made with respect to exogenous elements. A team assessing a particular country can warn authorities that reliance by their banks on wholesale funding from abroad, or even funding from their parent banks, entails risks, but individual teams are not well placed to assess the likelihood of global and cross border shocks. A specific example of an assumption that undermined the characterization of risk was an assumption in the case of Russia and Kazakhstan in 2008 of a stable price of oil (at around $100–120/barrel). At a minimum, these assumptions color the analysis, and they may be embodied explicitly in stress tests, as in the example just cited.

E. Were the Risks Identified with Clarity and Candor?

34. **Some FSSAs pointed to vulnerabilities or needs for action with greater clarity, candor, boldness or urgency than others.**[21]

- There was a widespread tendency to try to present a "balanced" view in the FSSAs, e.g., starting with a positive statement before acknowledging problems or challenges.

- Some key stability concerns that were mentioned in the report were not highlighted in the Executive Summary. For example, the Georgia FSSA (page 10) states that "…banking, insurance, and securities markets have become interconnected in ways that may increase the vulnerability of the system." This important concern was not highlighted elsewhere in the report.

- In some cases, the candor of the recommendations was affected by the sensitivity of specific issues and the reluctance of the country authorities, and sometimes staff, to discuss them. Typical in this regard are issues surrounding the exchange rate in countries with pegged exchange rate regimes. FSAP teams only address foreign currency exposures and the associated financial sector implications of changes in exchange rates; they do not address the desirability of changes in the exchange rate, which is more of a macroeconomic issue and outside the scope of the FSAP.

35. **This lack of clarity or candor obscures or confuses the message and can induce complacency, or at least provide an apparent justification for inaction.** Such concerns may be mitigated, but not eliminated, to the extent that a candid dialogue with a wide range of technical staff and senior officials takes place during the assessment missions. However, a candid dialogue, while invaluable, does not inform other stakeholders—including the Fund and Bank Boards—nor does it allow meaningful cross-country comparisons.

F. Were Authorities Meaningfully Engaged, and Were Actions Taken?

36. **Feedback from countries that have participated in the FSAP indicates that they find the exercise useful overall, but the degree of engagement and follow-up on recommendations varies widely.** This is not surprising, given the voluntary nature of the FSAP. Typically, but not always, the authorities respect the analysis and welcome the findings from the FSAP teams. However, the degree to which senior officials actively engage in a dialogue with the assessment team on the findings and recommendations and the analysis that led to those findings varies considerably among countries. Moreover, while the interaction with technical staff is reportedly almost always constructive, the dialogue at the political level can be more contentious.

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[21] The Ukraine FSSA is a good example of the use of clear, candid language.

37. **Experience shows the critical importance of the authorities' early engagement in the FSAP process.** Ideally, they should be interested *ex ante* in its scope, be willing to devote appropriate resources to the assessment process, be engaged in a dialogue with the assessment team with respect to the team's thinking and findings, and be serious about implementing its recommendations.[22] For instance in Estonia, the authorities engaged in a discussion of the scope of the assessment, focusing the assessment on those elements that both the FSAP team and the authorities agreed were of greatest concern; the authorities identified specific elements for inclusion in the FSAP. Actions taken by the authorities in response to the FSAP and its recommendations enabled them to withstand a crisis emanating from a problem in a small bank and positioned them well to deal with other potential shocks.

38. **The timing of the assessments also turns out to be crucial in engaging the authorities.** Assessments undertaken after the widespread impact of the current crisis was already being felt tended to be more persuasive, partly because possible problems were no longer hypothetical but also because the recommendations might have focused more on the immediate needs for action. For example:

- In one case, where the FSAP mission took place prior to the onset of the crisis and the FSAP request was encouraged by the IMF, the authorities insisted on only a narrow scope for the assessment. The dialogue with the authorities was difficult, the recommendations were not implemented, and the country is now suffering a serious crisis. The crisis might still have occurred even if the recommendations had been implemented, but its adverse impact might have been mitigated. In particular, larger capital buffers as recommended by the team would have helped protect some banks in the crisis. The authorities are now hastily following the FSAP recommendation to adopt a legal framework for bank resolution and corporate restructuring to deal with current problems, but without the luxury of time to do so in a carefully considered manner.

- In another case, the FSAP mission took place when the crisis was already apparent. While the authorities initially felt that their situation was different from that of other countries already experiencing a crisis, they were nevertheless open to discussion of the relevant topics and engaged in a good dialogue with the team. Subsequently, when the crisis began to affect the country, they were prepared to acknowledge that their situation warranted implementation of some of the recommendations, which are now being embodied in Fund and Bank programs.

[22] Of course, this does not mean all recommendations must be implemented, and in any case there is a sequencing and timing issue.

39. **The duration of the whole process varies significantly and affects the implementation of recommendations.** A shorter duration allows the authorities to move quickly on to implementation of the recommendations, and also allows access to a fairly up-to-date analysis to other interested parties (the Executive Directors and the Bank/Fund staff and private financial market participants). However, delays are frequent. In Guatemala, for instance, supervisory authorities engaged in a discussion of their plans to implement FSAP recommendations during an IMF staff visit that took place between the time of the FSAP mission and the finalization of the FSSA. In another case, more than 18 months separated the team's assessment mission and the distribution of the FSSA to the Fund Board. During that time, the team leader had frequent interactions with the authorities. After initial resistance to some of the findings, the authorities agreed to technical assistance to help them move to risk-based bank supervision—one of the team's recommendations—and to correct identified problems in the regulatory and legal structure. The nature of the country's supervision has improved significantly and its regulatory and legal structure is now among the more advanced in the region.

G. What Lessons Can We Draw?

40. **The foregoing suggests that the FSAP can play an important part in strengthening financial systems, thereby reducing the likelihood of crises and mitigating their consequences, but it has its limitations**. Specifically, although country coverage has been broadly appropriate, the voluntary nature of the program limited the scope for redirecting resources to countries that might have benefited from an assessment but had not expressed interest in participating. This meant that some systemically important countries were not covered. Similarly, while the FSAPs covered the right topics in most cases, and suitable adjustments were made to the scoping as the crisis unfolded, the recommendations were not always clear or forceful enough. In some cases, the recommendations came too late, in others too early, when the authorities were not sufficiently engaged. What could help the FSAP play a more constructive role in times of stress?

41. **More flexibility in the program would facilitate greater frequency of at least partial assessments where needed.** Monitoring vulnerabilities can require higher-frequency assessments, given that some specific problems are not typically foreseen well in advance. The FSAP was designed to identify fundamental vulnerabilities and weaknesses in financial practices and structure and to recommend ways to strengthen the financial system. However, the crisis has made clear that judgments about some specific vulnerabilities might have required higher-frequency assessments than were possible under the program. Given the resource constraints, relatively focused assessments could be undertaken, as warranted, to evaluate near-term vulnerabilities or address specific reform needs. Such focused assessments would complement less frequent but broader assessments.

42. **The FSAP needs to be complemented by more regular monitoring and analysis, including off-site assessments.** In particular, the FSAP can draw on the new Early Warning Exercise conducted by the IMF in cooperation with the Financial Stability Board. This should enhance the global coordination of risk assessments with the aim of making stronger policy recommendations to prevent the buildup of systemic risks. For the more advanced countries and some emerging market economies, off-site analysis of market-based indicators can be especially helpful.

43. **Bilateral and multilateral elements ought to be better integrated and mutually reinforcing, with more attention paid to crosscutting issues.** The analysis of crosscutting issues (e.g., in the WEO, GFSR, and FSB) should be embodied more systematically and consistently in FSAP assessments. Currently, the FSAP does not assess vulnerabilities associated with problems abroad (except references to weakness in foreign banks constraining their support for national subs/branches) and, even more to the point, vulnerabilities associated with a global crisis.[23] Similarly, the FSAP should inform the analysis of crosscutting issues. This recommendation is consistent with a priority expressed in the Fund's 2008 Triennial Surveillance Review.

44. **More efforts to enhance the degree of clarity and candor are warranted.** Some FSSAs point to vulnerabilities or needs for action with greater clarity, candor, and boldness—or with expressions of greater urgency—than do some others. In some cases, the degree of clarity and candor reflects the degree and urgency of the risks (as in Latvia, compared with Lithuania). In other cases, lack of clarity and candor might by symptomatic of a desire of team members to avoid conflict with national officials with whom they have, or will have, an ongoing relationship.

45. **A related and highly desirable feature would be a clearer—even quantified—assessment about the probabilities associated with the risks that are cited.** The absence of such assessment makes cross-country comparisons of risk quite difficult. However, it is probably unrealistic to expect that the assessment teams can form a clear view of probabilities beyond those embodied in formal stress tests. The priorities associated with the team's recommendations, including the urgency expressed concerning individual recommendations, may provide a sense of the relative importance of the risks, but that provides only limited help to comparisons across countries or over time.

46. **The authorities' early and full engagement in the FSAP process is crucial, so requests for participation in the FSAP should reflect a serious intention to strengthen the financial system.** It is important that requests for participation in the FSAP represent a

[23] Some external shocks are included in stress tests, but that does not entail an analysis of external factors themselves.

sincere intention to strengthen the financial system. Similarly, too much pressure on authorities to request participation may not be fruitful; if authorities are forced to undertake an FSAP, there is much less likelihood of success. In cases where the process is prolonged, it is desirable that the dialogue between the team and the authorities should continue, to enhance understanding and facilitate updating of the findings.

47. **Efforts should continue to adapt the analytical content of FSAPs to new realities.** For instance, stress tests need to consider scenarios that embody greater interaction with global or regional developments. They also need to be able to consider assumptions that are more extreme. Overly optimistic assumptions can lead to complacency. It would also be useful for teams to look more closely at other assessments, especially for analytical insights or special features. Examples of special features that might usefully be replicated include the already-piloted Risk Assessment Matrix, which is designed to help organize the analysis and presentation of FSAP stability assessments and facilitate their integration in bilateral and multilateral Fund surveillance.

48. **Better knowledge management is needed to disseminate the lessons learned during assessments.** FSAP assessments over the past decade have taught us much about the workings of financial sectors, in terms of both the benefits for sustainable economic growth and the potential problems. Identifying the lessons learned and making the gaps found in risk management more accessible to both staff and private analysts might have helped to avoid some of the current issues. A number of papers describe the lessons from particular aspects of the financial sector or particular regulatory or supervisory practices. In addition, the World Bank carried out an intensive exercise in 2008, which took stock of the recommendations and lessons from the FSAP, and it has been preparing a series of guidance notes based on these lessons. However, much more remains to be done in this area.

49. **Future assessments could pay more attention to the role of nonbank institutions and markets**, which not only hold out the promise of providing greater financial services to households and firms in normal times, but also provide a partial safety valve in situations where banks are stressed.

II. System-level Stress Testing in FSAPs: Issues, Lessons from the Crisis, and Further Steps[24]

50. **System-level ("macro-") stress tests have been used in stability assessments in the context of the FSAP to identify vulnerabilities that could undermine the stability of a country's financial system**. Stress testing in one form or another has been universal in FSAP assessments and updates, ranging from very simple to rather sophisticated exercises with associated macro modeling. The tests have been tailored to country-specific circumstances, in particular data availability and financial system complexity and modeling capacity. Stress tests are not the only tool to assess vulnerabilities, however: they need to be—and have been—supplemented by other quantitative tools, as well as qualitative analysis.

51. **Stress tests have become more sophisticated over time**. System-level stress testing methodologies are still relatively early in their development, but there has been rapid evolution in some areas in recent years, which has been reflected in FSAP stress tests. IMF staff has contributed to the methodological improvements, often cooperating with networks of central bank and other experts from around the globe.

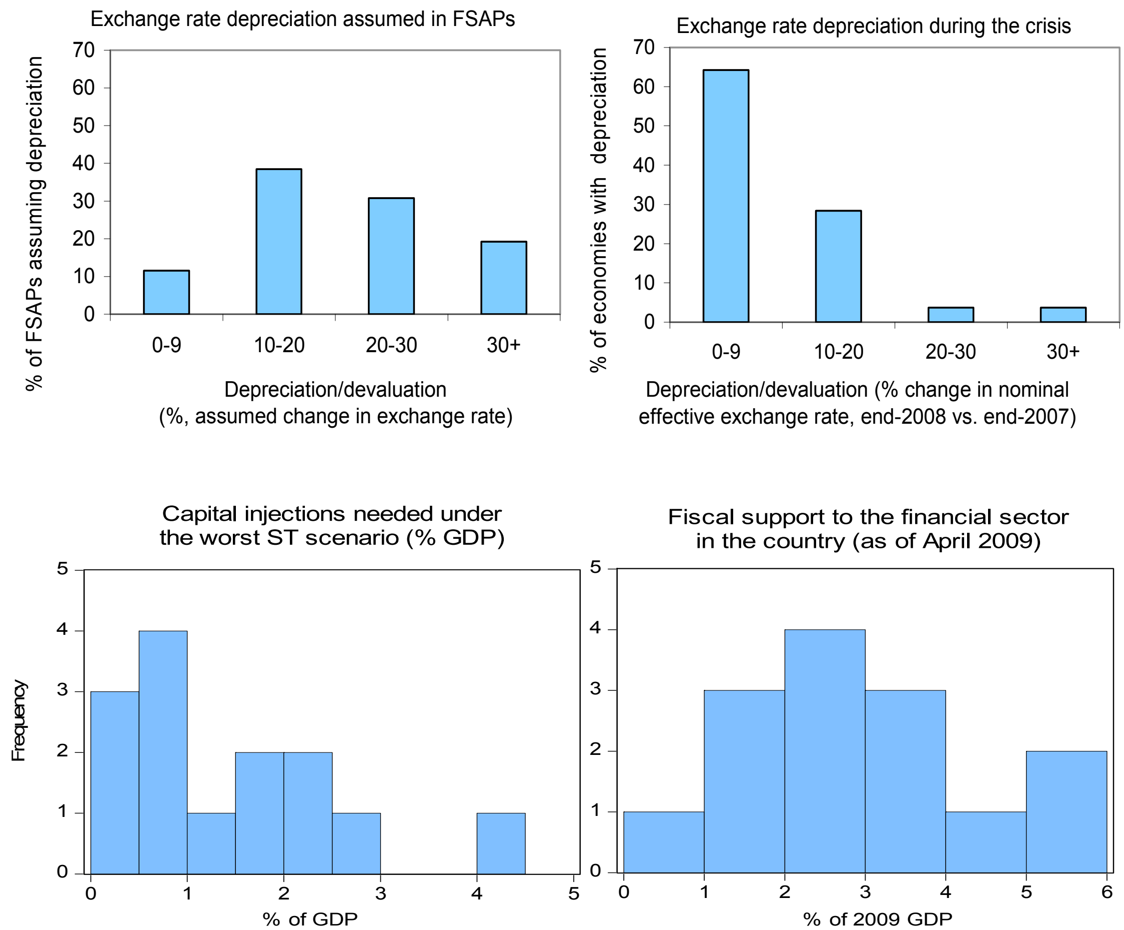
52. **The global financial crisis has shown that stress tests, while useful, still leave something to be desired**. Some of the tests performed in the runup to the crisis—both those in FSAPs, as well as those run by authorities and others—have missed important sources of problems during the crisis, such as exposures to liquidity risk, concentration of exposures in particular sectors, and exposures to off-balance sheet vehicles. As regards the size of assumed shocks, the picture is mixed. In many cases, the assumed shocks in FSAPs have been of a similar order of magnitude to those that actually occurred during the crisis. For example, in economies that experienced exchange rate depreciation during the crisis, the size of the depreciation has been in line with, or even somewhat lower than, the assumed exchange rate shocks in the FSAP stress tests in the runup to the crisis (Figure 1, top panel). On the other hand, GDP declines observed during the crisis were somewhat larger than those assumed in FSAPs, while the observed shocks to nonperforming loans were far smaller than those assumed in FSAPs [25] At the same time, the costs of banking sector instability calculated

[24] Based on an upcoming IMF Working Paper by M. Čihák, A. Tieman, and L. Ong, and previous work by S. Stolz, M. Moretti, and M. Swinburne ("Stress Testing at the IMF," IMF Working Paper 08/206) (Washington: International Monetary Fund).

[25] For GDP, some of the difference may be explained by the fact that the assumed GDP shocks in stress tests do not capture feedback effects that may be reflected in actual data from the crisis. For nonperforming loans, the discrepancy most likely reflects the lagging nature of this variable: it has probably not yet reflected the true deterioration in asset quality. For interest rates, the FSAP assumptions were broadly in line with actual changes (which have reflected a combination of dramatic increases in spreads with major cuts in policy rates).

in FSAPs appear somewhat smaller than actual.[26] This underscores that at least as important as the size of the stress test trigger events have been the methodological challenges in making the stress testing rich enough to capture key aspects of the transmission mechanism.

Figure 1. Stress Test Assumptions and Results, and Actual Crisis Developments



Sources: FSAPs, International Financial Statistics, and national authorities.

53. **Based on this experience, the following sections outline the key lessons, note the areas in which progress has already been made or is underway, and propose a number of further improvements.** The key conclusions are that, *first*, more emphasis is needed on obtaining adequate data, covering both on- and off-balance sheet exposures. If important

[26] To illustrate this point, Figure 1 (bottom panel) shows, for a sample of pre-crisis FSAPs: (i) capital injections that, according to the FSAP stress tests, would be needed to ensure that all banks satisfy the minimum capital adequacy requirement after the worst-case stress testing scenario, and (ii) the size of fiscal support provided so far to the banking systems in the same economies. The two charts need to be interpreted with caution, given that the two variables capture different aspects of the costs of financial sector instability.

information is missing or data quality is compromised, it is crucial to communicate this clearly, together with any simplifying assumptions. *Second*, testing for liquidity risk requires increased attention, and more effort needs to be put into designing scenarios that combine solvency risks with liquidity risks. *Third*, stress tests need to be as unconstrained as possible, i.e., no shocks should be excluded or reduced ex-ante because of fears of triggering runs on banks and other "political economy" considerations. Running stress tests regularly, providing greater clarity about the data and methodology limitations, and harmonizing methodologies for peer groups of countries may help to alleviate these constraints. And *fourth*, modeling and methodologies need to be continually enhanced, better to reflect the full distribution of losses that may arise from any particular scenario; the strength of contagion channels and second round effects (both domestic and across borders), which were dramatically highlighted during the recent crisis; and, where feasible, nonlinearities.

A. Stress Test Preconditions

54. **Main issues:**

- *Quality of input data.* Stress tests depend on the quality of the underlying data. In some countries, important information is missing; in others, data are available in principle but difficult to obtain or process, and in the end may not be used.

- *The scope of the exercise*. To what extent should it cover "shadow banking" and various nonbanks? How important is inclusion of off-balance sheet items? To what extent should it include liquidity and funding exposures?

55. **Progress so far:**

- *Staff is using tools to assess the quality of data*. Other parts of the FSAP, in particular assessments of the regulatory framework, have been used to form a view about the quality of the underlying data.

- *Recent tests have included more caveats about input data*. In response to previous reviews of the FSAP, reporting of results from stress-testing in recent FSAPs has taken less of a "black box" approach, and provided more discussion of the limitations implied by data and methodology. These "health warnings" about the interpretation of results allow FSAPs to nuance somewhat better the messages about the strength of the financial sector.

- *Nonbank financial institutions have been increasingly covered in FSAP stress tests*. Coverage has often been extended to include insurance companies and (to a lesser degree) pension funds. Nonbanks are usually tested separately from banks, but in some FSAPs, cross-sectoral conglomerates have been tested at the group level.

56. **Proposed further steps:**

- *Even more emphasis needs to be placed on explaining the data and assumptions*. The quality of data and its implications for results should be described explicitly and candidly. Many stress tests can be further strengthened in this respect, but in some circumstances, more caution is critical before reported data are taken at face value.

- *Not conducting stress testing should always be an option when available data are of very poor quality*. Even rudimentary tests can often add value, but they need to be undertaken in conjunction with other analysis, and the limitations of such approaches need to be clearly flagged. Otherwise, there is a risk of deceptively "precise" results that mask an unknown situation.

- *Further work is needed to integrate stress testing with other quantitative tools and with the qualitative analysis in the FSAP*. This includes improvements in the availability of FSIs and further "benchmarking" of FSIs, built around a growing understanding of how different countries' FSIs need to be interpreted. The existing work program to develop FSIs is central here. It also means more widespread use of market-based indicators, both as complements to stress tests and, where feasible, as part of stress tests. As regards the qualitative analysis, it is important to leverage the assessment of the regulatory framework in the preparatory stages of the stress testing exercise.[27]

- *Extending further the scope of stress testing may be warranted in some cases.* While stress testing of insurance companies and financial conglomerates will likely continue to become more common, some FSAP stress tests may need to go further in including "shadow banking" activities and additional non-bank financial institutions directly in the quantitative stress testing analysis, to better capture systemic risks.

B. Designing the Stresses to Be Applied in Stress Tests

57. **Main issues:**

- *Arriving at a common understanding of what is exceptional but plausible.*[28] Shocks that are extreme may be considered implausible. The message that "the system breaks if massive shocks are applied" would not be very informative. Also, to some extent,

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[27] This is an area where particular caution is needed if stress testing is done outside an FSAP and without a good understanding of the regulatory environment.

[28] See a discussion on this topic by the Independent Evaluation Office (IEO) of the IMF in its 2006 *Report on the Evaluation of the Financial Sector Assessment Program*.

there is a tradeoff between test strength ("thinking the unthinkable") and authorities' willingness to participate (and agreement to publish the results).

- *Combining shocks in a consistent way.* This is a challenge, given that models estimated on recent periods break down under stress (as illustrated in the crisis).

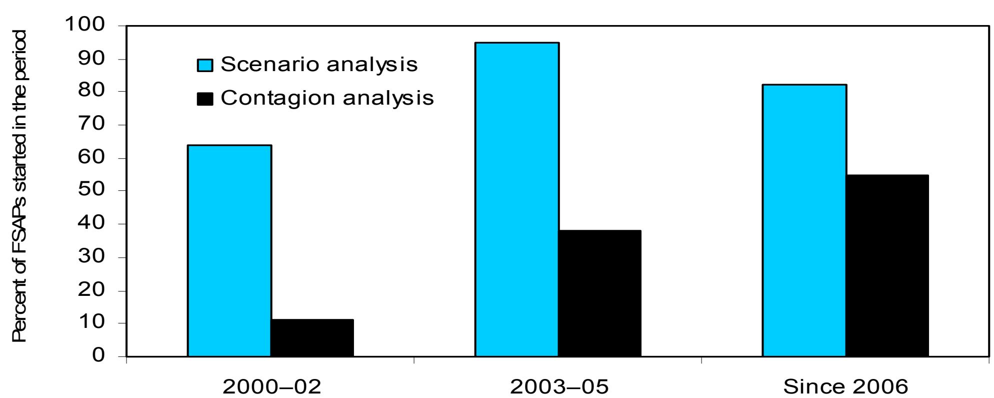
58. **Progress so far:**

- *Recent FSAP tests have put more emphasis on the use of scenarios* that involve simultaneous movement in various macro risk factors (Figure 2).

- *Recent FSAPs have had more detailed explanations of the size of the shocks* and more extensive use of macroeconomic models to simulate the effects of the certain scenarios and events on economic and financial variables as outputs. Where feasible, the calibration techniques have used models to characterize the relationships among macro risk factors or sizes of shocks when single variables are shocked (by using statistical or historical approaches), and to derive an internally consistent set of shocks to macroeconomic variables from a macroeconomic model.

- *Recent FSAPs have looked at longer horizons when assessing shock impacts*. This is more realistic (given that most stressful episodes last longer than a year), but it is more challenging to model (because reaction functions need to be taken into account so that second-round and feedback effects become more prominent).

Figure 2. Evolution in FSAP Stress Testing Techniques, 1999–2009



Source: FSSAs.

- *Recent FSAPs have been more likely to examine sensitive shocks.* They have more frequently included shocks such as public debt defaults and exchange rate devaluations of hard exchange rate pegs (although not all of these were published).

59. **Proposed further steps**:

- *The experience from the crisis suggests that more severe shocks may need to be included.* One approach would be to present scenarios of different severity to illustrate how the impacts depend on the assumptions. To give an example, a test modeling a scenario with 5 percent likelihood could be combined with a 2 percent scenario as well as a 1 percent scenario (i.e., one likely to occur about once in 100 years). To overcome myopia, it is important to calibrate scenarios on data sets as long and broad data sets as possible, not only data for, say, the last 5 or 10 years. The availability of such longer data sets has often been a constraint, but in some cases it might be possible to simulate hypothetical but relevant longer series from other country experiences.

- *Focus more on relative impacts and evolution over time*. A finding that systems are very exposed in a certain area, or that they have become much more exposed in that area compared to the last period the stress tests were done, can still be very useful information.

- *The scope for more standardization, if not uniformity, should be explored for stress tests in comparable systems.* While it is often necessary to tailor stress tests to data availability and financial system complexity, it may be useful to form country peer groups based on criteria related to the complexity and sophistication of financial systems. There is further scope to identify "good practices" in FSAP stress tests, within a flexible overall framework. Standardizing a core set of data sets, methodologies, and sensitivity analysis within the peer groups could lead to the development of common benchmarks for cross-country comparisons, facilitating vulnerability analyses. Some work along these lines has already been done. For example, an adaptable "template" for smaller and less complex financial systems has been made publicly available, and is used in several countries.[29]

- *More attention needs to be given to careful interpretation of stress test results in this area, too*, both in light of the methodological caveats, and in terms of the relative importance of shocks (e.g., avoid overemphasizing market risks when credit risks are more relevant).

[29] M. Čihák, 2007, "Introduction to Applied Stress Testing," IMF Working Paper 07/59 (Washington: International Monetary Fund).

C. Methodology and Implementation of Stress Tests

60. **Main issues**:

- *Improving stress tests for liquidity risk* is a major issue, highlighted by the crisis.
- *Methodologies need to take better account of full distributions of losses, nonlinearities, structural breaks, correlation across portfolios, and contagion and feedback effects (both across institutions and across borders).*

61. **Progress so far**:

- *Interbank contagion* has become more commonly integrated into stress testing (Figure 2) to examine indirect effects of the common shocks. Most commonly, this has been based on a matrix of exposures in the domestic interbank money market, but newer methodologies can take quite different approaches based on "default dependence" (see below).
- *Substantial work has been done to better tie credit risk to macroeconomic shocks*. One methodology that IMF staff has been working on is a portfolio credit risk model, based on CreditRisk+, complemented with models of probability-of-default (PD) and loss-given-default (LGD), with specific links to macro-financial factors. Because the model uses as basic input the same data required by the Basel II internal ratings-based (IRB) approach, it provides a valuable tool for financial supervisors to benchmark their credit risk evaluations. This model has been applied in several FSAPs, and in the context of technical assistance; and has also been shared with various country authorities. A second, richer set of methodologies developed by IMF staff addresses two major constraints faced by most stress tests: short time series of risk variables, and lack of default dependence information. It combines quantitative tools developed to measure default risk, portfolio credit risk, and default dependence through time and under data-constrained environments. In estimating the impact of macroeconomic shocks on individual banks' economic capital and on the system's economic capital, this framework[30] allows better quantification of unexpected losses (which can be significantly larger than expected losses from the same scenario), and for time-varying coefficients and some forms of nonlinearities. Input data are also in line with the Basel II IRB approach. Variations of this framework have already been applied in

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[30] See in particular M. Segoviano and P. Basurto, 2006, "Portfolio Credit Risk and Macroeconomic Shocks: Applications to Stress Testing Under Data-Restricted Environments," IMF Working Paper 06/283; M. Segoviano and C. Goodhart, 2009, "Banking Stability Measures," IMF Working Paper 09/4 (Washington: International Monetary Fund).

several recent FSAPs, and further potential extensions are being developed (e.g., to try to capture macroeconomic feedback effects).

- *Involvement of authorities*. To leverage on the country-specific methodologies and technical expertise (and to increase ownership), FSAP stress tests have increasingly involved the authorities, from the design of the methodology and selection of scenarios to the implementation or coordination of the tests and the analysis of results. This has been helped by the fact that stress tests have become widely used (about 75 percent of central banks' own financial stability reports include stress tests).[31] Relatively, technical assistance on stress testing has expanded, often following an FSAP. The IMF also cooperates with experts from central banks and supervisory agencies around the world on projects on stress testing-related issues (for instance, projects are ongoing with the European Central Bank and the Deutsche Bundesbank on applications of the innovative stress testing methodologies).

- *FSAP stress tests also increasingly involve financial institutions directly*. This is particularly common in advanced economy FSAPs. Institution-by-institution implementation uses the banks' own models, analyses, and judgments about the impact of the given scenarios and shocks. This promises more realistic calculations at the level of individual portfolios; however, care needs to be taken to ensure consistency and integrity of the exercise as well as accurate reflection of contagion effects. For this reason, bottom-up tests are complemented by top-down calculations.

62. **Proposed further steps**:

- *Further work on liquidity risk* is warranted, to expand existing work on funding and market (asset) liquidity risk and incorporate off-balance sheet concentration risk (e.g., excessive credit lines to a single counterparty). The financial crisis has highlighted dramatically how liquidity issues can turn into solvency problems.[32]

- *Joint analysis of market, credit, and liquidity risk*. In most stress tests, including many in FSAPs, the impacts of different risks are assessed separately and then added up, which may not be correct since the risk measures are not necessarily additive. Correlations among credit, market, and liquidity risks need to be examined in more detail. First, the joint analysis of indirect credit risk (credit risk changes arising from changes in key market prices) alongside the associated market risk effects could be

[31] M. Čihák, 2006, "How Do Central Banks Write on Financial Stability?" IMF Working Paper 06/163 (Washington: International Monetary Fund).

[32] The upcoming IMF Working Paper by M. Čihák, A. Tieman, and L. Ong illustrates, on an example from the Icelandic banking system, how realistic stress tests for liquidity risk could be run on pre-crisis data.

strengthened. Second, wider-ranging scenarios could be considered that directly include funding or market liquidity stresses (a liquidity run) as well as the standard macro effects (so that the shocks represent more of a "perfect storm").

- *Modeling nonlinearities and structural breaks in behavioral relationships*. A common example in an FSAP context is modeling a major devaluation in a hard currency peg country. Past time series for such a country may be of limited use given a lack of past exchange rate volatility, but experience from other countries and expert judgment can be used for calibrating such tests. Further work is needed in this area.

- *Using the CCA for scenario analysis*. The CCA combines balance-sheet and market information with widely used finance techniques to construct risk-adjusted balance sheets that better reflect credit risk. By using a factor model to determine which key domestic and international factors drive changes in the financial institution's assets, it is possible to link macro shocks to credit risk indicators.[33] This approach can be applied to a wide range of financial institutions, if they issue securities in sufficiently deep markets, and should be considered for use in future FSAPs.

- *Further work on credit risk modeling*. Further work is needed on specific modeling of distributions of PDs and LGDs, as well as correlations between banks and between portfolios better to reflect credit risk at the system level.

- *Better modeling of reaction functions of financial institutions*. These may mitigate the effects of shocks on individual institutions, but if they allow for common reactions, herding behavior, fire-sales and the like, the opposite may well be true at the system level.

- *Modeling second-round feedback effects*. Further work on the feedback effects from the financial sector back to the macroeconomic environment, and back again, is very important.

- *Contagion testing* needs further development. An analysis of the spillover risk can be a major contribution of macroprudential stress tests. One form to be explored, in line with the analysis undertaken by some central banks, are exposures through payment and settlement systems. Another is liquidity contagion, especially where there is experience from past runs. Yet another avenue is using Extreme Value Theory to explore extreme co-movements between institutions as the basis for a contagion stress test.

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[33] D. Gray and J. Walsh, 2008, "Model for Stress-testing with a Contingent Claims Model of the Chilean Banking System," IMF Working Paper 08/89 (Washington: International Monetary Fund).

- *Cross-border transmission channels* need more consistent coverage in FSAP stress testing, which overall have tended to focus on the segments and risks to the financial system with domestic implications. However, there are a couple of notable exceptions recently which have included a more substantive analysis of cross-border risks. In addition, recent initiatives, with IMF staff's involvement, have been aimed at carrying out stress tests on a regional basis (in particular, for European countries).

III. The Survey of Country Views on the FSAP Results and Analysis

A. Methodology

63. **A joint World Bank/IMF survey of country authorities was conducted in spring 2009 to assess country authorities' views on the FSAP.** The survey provides an update to a similar survey conducted in 2005 by the IMF's Independent Evaluation Office and the World Bank's Independent Evaluation Group.[34] The survey was developed by the Bank and the Fund, and administered by the IMF's Technology and General Services Department. Participants could respond directly on-line or submit responses by e-mail or fax. Survey participants were advised that their responses would be treated as confidential and that individual countries would not be identified. The survey questions are attached (Appendix I) and detailed data on responses is provided in Appendix II.

64. **All member countries and currency unions that had completed an assessment under the program by end-2008 were invited to participate.** In total, there were 122 potential survey respondents (Table 6).[35] For the analysis of the results, a distinction is made between those countries that have undertaken an initial assessment only, and those that have also had an update. In addition, countries are classified into four groups: Major Advanced (MA), Other Advanced (OA), Large Emerging Market Economies (LEMs), and Other Emerging Market Economies and Developing Countries (OEMs/DC).

Table 6. FSAP Survey Country Participation

(Number of economies, unless otherwise noted)

Economy Type	Countries Surveyed	Respondents	Response Rate[1/]
Major advanced	6	6	100.0
Other advanced	20	13	65.0
Large EMEs	16	8	50.0
Other EMEs/DCs[2/]	80	36	45.0
Total	122	63	51.6
of which: FSAP Updates		33	
of which: Fund-only		21	

1/ In percent.
2/ Includes currency unions that have undertaken an FSAP assessment.

[34] "Evaluation Report: Financial Sector Assessment Program", Independent Evaluation Office of the IMF, 2006.

[35] 117, if ECCU countries, which responded as a group, are counted as one.

65. **At just over 50 percent, the response rate is high enough to enable meaningful inferences, given the size of the target population.** About two-thirds of the respondents were central banks, and another 20 percent were supervisory agencies. The bulk of respondents hold high-level positions in their institutions, and one-fourth at the level of head/deputy head of the institution. About 80 percent of the respondents count financial stability- and/or financial development-related policies as part of their regular responsibilities. Finally, about half of the respondents have been directly involved in the FSAP process and assessment through their country's participation in the program.

66. **The questionnaire was designed to elicit the authorities' views on key aspects of the FSAP program.** In total, there were 24 questions, several of which asked respondents to rate—on a 5-point scale—their level of agreement with various statements. Other questions asked respondents to choose among several alternatives those that best describe their views on particular issues.

B. Major Findings[36]

Motivation for requesting an FSAP

67. **Regarding the main reasons put forward for participating in the FSAP (Figure 1, Appendix II):**[37]

- About 90 percent of respondents selected "[t]o obtain an independent assessment of [their] country's financial system." This was also the major driver of requests for FSAP updates.

- Among those that had an update, the fact that the previous assessment was becoming dated—4 to 5 years old—was another important factor, chosen by about 50 percent of this sub-group of respondents.

68. **These results are similar to those reported in the IEO/IEG report.** However, the number of countries that reported having undertaken an FSAP because it was recommended by the IMF/World Bank has dropped from 42 percent in the IEO/IEG to 25 percent in this survey, suggesting that FSAP demand is reaching levels that do not require initiation by the Bank/Fund.

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[36] The responses are presented in the Appendix II.

[37] Unless otherwise explicitly noted in the figures, the reported data refers to all survey respondents.

FSAP analysis

69. **Countries were asked which features of the FSAP they found most useful (Figure 2, Appendix II)**:

- Around 80 percent of the respondents, whether they had undergone an initial assessment or an update, considered "the assessment of financial sector regulatory frameworks and the supervisory practices" and "the assessment of financial system stability" as the most insightful features.

- The integrated analysis of the financial sector was chosen by about 60 percent of respondents, a percentage that rose to 70 percent among those that underwent updates. The latter finding would prima-facie suggest that the streamlining of updates has not been detrimental to this feature of the FSAP.

- However, there would appear to be clear room for improvement when it comes to assessing the impact of macroeconomic developments on financial sector stability (only about one in five respondents found this feature most insightful) or on the assessment of financial sector developmental priorities.

70. **These results are again similar to those of the IEO/IEG study.** Although a direct comparison is not possible, it appears that the views on the assessment of financial standards and codes was as positive as it had been five years ago (80 percent).

71. **Regarding the analytical components of the assessment (Figure 3, Appendix II)**:

- Consistent with the answers to the previous question, the *assessment of compliance* with financial sector international standards and codes was selected by slightly more than 80 percent of survey respondents. This does not vary at the level of the sub-groups of initial assessments and updates.

- The second most highly-rated analytical element is the stress testing and system-level risk modeling, which was selected by three-quarters of the respondents. As above, roughly the same percentages were recorded for the two subgroups of respondents (initial assessments or updates).

- However, there were sharp differences in the views of the assessment of crisis management frameworks, with the percentage that found it most useful rising from 15 percent for the initial assessment group to 56 percent for those that had had updates. This may reflect the increased and more systematic attention given to crisis management frameworks in recent years, where updates are increasingly the norm. A similar though less striking difference was seen in respondents' views on the usefulness of financial soundness indicators and the assessment of specific issues (e.g., competition, efficiency) in key market sectors (e.g., banking, insurance).

- The assessment of access to finance remains an area where further development of analytical tools and their deployment in FSAP assessments would most likely be welcome.

72. **With respect to the scope and analysis of FSAPs (Figure 4, Appendix II)**:[38]

- There was substantial agreement that the coverage of the financial sector is adequate (over 80 percent chose either "5" or "4" in the five-point scale), be it in an initial assessment or an update. Likewise, about 70 percent viewed the depth of analysis as adequate, although this percentage was lower (66 percent) for updates.

- However, a lower proportion seemed satisfied with the FSAP's ability to take into account the unique circumstances of countries and to balance financial sector stability issues and development (54 percent and 62 percent, respectively). However, on the latter issue there is progress, as suggested by the fact that 68 percent appeared satisfied in the update subgroup, compared with 48 percent in the initial assessment subgroup.

- On whether the FSAP analysis provided *new* analytical insight on countries' financial sectors, slightly more than half of the respondents agreed, with 48 percent agreeing among the initial assessment group compared to about 60 percent in the update group. Some 75 percent of the large emerging markets and a much lower percentage of advanced countries agreed with statement.

FSAP team and process

73. **About 95 percent of respondents considered the teams' expertise adequate (Figure 5, Appendix II),** whether referring to initial assessment or update teams. These percentages are in line with the results reported in the IEO/IEG survey.

74. **Regarding FSAP-related processes (Figure 6, Appendix II),** overall, there was a clear improvement in the authorities' views of various aspects of FSAP processes between initial and update assessments:

- Some 86 percent considered that the information provided ahead of the FSAP assessment was adequate, although about one in eight considered that too little

[38] Respondents were asked to rate their level of agreement on a five-point scale with various statements, with a rating of 5 indicating strong agreement and a rating of 1 indicating strong disagreement.

information had been made available. However, about 90 percent of FSAP update respondents though that the information provided had been adequate.

- There has clearly been some progress in streamlining data requests between initial and update assessments. The percentage of respondents considering that "too much" was asked drops from about 30 percent for the initial FSAP subgroup to about 15 percent in updates. However, this remains an area of concern for the Other Advanced Economies group, where the percentage viewing data requests as "too much" was about 40 percent.

- About 80 percent of the respondents considered the lead time for FSAP preparation adequate, while one in seven found it to be too little.

- In total, about 25 percent of respondents thought that the overall process time requirement was either too little or too much, both for initial assessments and updates.

- Finally, one in five respondents considered that FSAP teams had too little knowledge of country-specific circumstances, roughly in line with the percentage of respondents holding a negative view on the extent of consideration given to specific country circumstances in the FSAP analysis (see Question 7). There was, nevertheless, a notable difference in this area between initial assessments and updates. This could suggest that the institutional knowledge built up in the initial assessment is being transferred to the update teams.

FSAP recommendations

75. **Regarding the clarity, candor, prioritization, and feasibility of recommendations (Figure 7, Appendix II):**

- Recommendations were clear for about 90 percent of respondents. The bulk of respondents also thought that the recommendations were candid, with a slightly more favorable assessment within the update group.

- About 60 percent of respondents agreed that FSAP recommendations were well prioritized (44 percent in the initial assessment subgroup and 65 percent in the updates subgroup).

- Finally, regarding the effort needed to act on the recommendations, about 70 percent of respondents agreed that recommendations were actionable with a reasonable effort on their part.

76. **On the implementation of FSAP recommendations (Figure 8, Appendix II)**:

- According to the authorities, recommendations were fully implemented in a little less than one-third of the countries, although the ratio was higher (about 40 percent) among those with updates.

- About one-third of the respondents in countries where the recommendations were not fully implemented indicated that they were in disagreement with the recommendations, with disagreements more prevalent for updates.

- Other factors explaining lack of implementation included political constraints and recent completion of the assessment.

- There was a clear shift on whether recommendations were considered a priority as a reason for not fully implementing them. The percentage of respondents that cited this factor fell from roughly one in three for the initial assessment subgroup to one in twenty for the updates subgroup. However, no respondent chose "difficulty in prioritizing recommendations" as an explanation for lack of full implementation.

FSAP usefulness

77. **Regarding the overall usefulness of the FSAP (Figure 9, Appendix II):**

- Overall, about three-quarters of respondents indicated that they were satisfied or very satisfied with the *overall usefulness* of the FSAPs for their countries. This percentage rose from about 60 percent for initial assessments to 82 percent for updates. Only 7 percent of respondents were dissatisfied/very dissatisfied with the FSAP's overall usefulness.[39]

- This positive assessment appears to be linked to the impact of the program on "[r]aising awareness on the need to take policy actions to preserve financial stability," as 80 percent of respondents reported being satisfied in this regard. There was a marginal difference in this dimension between initial and update assessments.

- Between half and 60 percent of the countries found the FSAP program to be at least satisfactory when it comes to expanding technical capabilities, prioritizing the reform agenda, and contributing to positive changes in the financial sector.

- As regards the impact of the program on improving the policy dialogue and support from the World Bank and the Fund, around 60 percent of respondents deemed

[39] Four country respondents indicated that were dissatisfied/very dissatisfied, including three for initial FSAPs.

themselves to be at least satisfied in this regard.[40] Respondents also believed that both the IMF and the World Bank have shown improvements in these areas of their work between the initial assessment and the update.

- There was room for increasing the FSAPs role in "generating a public debate and consensus …" and in "[r]eaching understanding with legislature…" on financial sector reforms. However, there are many factors at play in this regard, including the authorities' decision on making the results of the assessment public (see below).

78. **Regarding areas where FSAPs have been *most/least useful* (Figures 10 and 11, Appendix II):**

- The top three *most useful* areas selected by respondents were the integrated view of the financial sector (about 60 percent); a better understanding of risk exposures and their systemic importance (45 percent); and an objective independent evaluation of the financial sector (about 40 percent). These were the first three choices for both the initial assessments and updates subgroups.

- The four least useful areas selected by respondents were the enabling of reforms by contributing to a public debate (about 45 percent) and, at around 35 percent each, the identification of technical assistance needs, improved coordination among financial sector regulators, and the identification of financial sector development needs.

FSAP outcome and follow-up

79. **Respondents were asked to identify the channels through which the FSAP contributed to policy debates in their countries (Figure 12, Appendix II):**

- The two main channels through which the authorities saw FSAPs affecting policy debates were discussions among public agencies, and between the government and the financial sector.

- Progress in this area is also evidenced by the decline in the percentage of respondents that considered that the FSAP *did not* contribute to policy debates, which fell from about 30 percent in initial assessments to about 15 percent in updates.

80. **With respect to publication of the results of the assessment (Figure 13, Appendix II)**, about two-thirds of the respondents indicated that they had published their

[40] The percentage for the World Bank is computed based on the countries where the assessments have been joint World Bank/Fund; the one for the Fund, include both joint and Fund-only assessments.

FSSAs. Among those that had not, half indicated concerns over market-sensitive information in the report.

81. **On the adequacy of follow up to the FSAP's recommendations by the Fund and World Bank (Figures 14 and 15, Appendix II):**[41]

- The results suggest that the IMF has the mechanisms to provide adequate follow up. Indeed, only a small percentage of respondents considered that there was no meaningful follow-up by the Fund, a proportion that drops to a low single digit for updates. In particular, about three-quarter of respondents agreed that Article IV consultations was an adequate follow-up vehicle, with a noticeable rise in the share of respondents that hold that view among FSAP update countries. Respondents also had a similarly positive view of the FSAP update as a follow-up vehicle to the initial assessments. However, respondents held less favorable views of the follow up from Fund TA and Fund programs.

- Although with room for improvement, the World Bank appears to have made remarkable progress in its follow-up. The percentage of respondents that agreed with the statement "[t]here was no meaningful World Bank follow-up" declined from almost half of respondents with an initial assessment to less than 20 percent in update cases. Moreover, the share of respondents that saw adequate follow-up delivered through the Bank's three main follow-up instruments (analytical work/training, technical assistance, and lending for financial sector reform) rose sharply from 10–30 percent for initial assessments to 60–65 percent for updates.

82. **On the potential impact of FSAPs (Figure 16, Appendix II):**

- Responses indicated clear gains in the depth of surveillance of financial sector issues following an FSAP. Assessments have been associated with a substantial increase in the depth of discussions of financial sector issues with Article IV missions in over half of the cases.

- FSAPs had reportedly little impact on spurring foreign investors' interest in countries undergoing an assessment, regardless of whether this was an initial assessment or an update. Although the sample is small, none of the large emerging market countries that participated in the survey agreed with the statement "[f]oreign investors' interest in my country increased following the completion of the FSAP assessment."

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[41] The reported percentages are computed in relation to the total number of respondents less the number of respondents that selected non-applicable or that skipped the question. For the World Bank, only joint assessments are taken into account.

- Only one in five survey respondents saw an impact of the FSAPs on improving coordination among supervisors in a region, with a slightly higher percentage among the advanced countries.

- Finally, about half of the respondents found that the strategic view of financial sector development was strengthened following FSAPs.

Strengthening the FSAP

83. **Regarding areas where the FSAP could be further strengthened, a key issue was whether the streamlining of FSAP updates had been achieved without sacrificing depth of analysis (Figure 17, Appendix II).** Only countries that had undergone at least one update were asked to respond to questions on the streamlining of updates:[42]

- There was strong agreement that FSAP updates were more streamlined (and thus less onerous on the authorities) than initial assessments, with three-quarters of the respondents sharing that view.

- The gains in streamlining did not come at the expense of the ability to provide robust assessments of financial systems. Indeed only a small minority (10 percent of respondents) considered that updates have become too narrowly focused.

- The assessment of only selected principles from an international standard (e.g., Basel Core Principles for Effective Banking Supervision) was viewed by 80 percent of the respondents as sufficient to provide a robust assessment of regulatory and supervisory frameworks.

- Slightly more than half of the respondents agreed that on the issues covered, depth of analysis in FSAP updates compared favorably to the initial assessments.

- That improvement may well be in part the result of better analytical tools (e.g., stress testing) used in assessing the stability of the system. Roughly three-quarters of the respondents reported that to be the case.

- There was also a significant recognition of improvements in the assessment of financial sector infrastructure vis-à-vis initial FSAPs (about 75 percent of respondents).

- About 90 percent of respondents agreed that relatively comprehensive FSAP updates should be conducted every 5–6 years.

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[42] The percentages reported in this section exclude those respondents that left it blank or that selected N/A.

84. **As to whether FSAP assessments should become mandatory (Figure 18, Appendix II)**:

- Slightly more than two-thirds of all respondents expressed the view that FSAPs should remain voluntary. The strongest support for that view was found among “Other Emerging Market Economies” and the “Developing Economies” subgroup. In contrast, close to 40 percent of the Advanced and Large Emerging Market Economies thought that FSAPs should not continue to be voluntary.

- Two-thirds of the participants agreed that, if FSAPs became mandatory, the frequency of assessments should be primarily based on the systemic importance of the country.

- There was very strong support for keeping publication of FSAP results (i.e., FSSAs and ROSCs) voluntary, but with a *presumption* for publication (90 percent).

85. **On the rules on deletions and corrections for the publication of FSSA and ROSCs reports (Figure 19, Appendix II):** There is a clear need to better disseminate and explain the rules. Close to 40 percent of respondents indicated that they were not aware of the rules, or viewed that their application involved negotiation with Fund staff. A significant number of respondents indicated concerns vis-à-vis the adequacy of protection against market reactions or the possibility of misinterpretation.

APPENDIX I: SURVEY QUESTIONNAIRE

BEFORE YOU BEGIN, TELL US ABOUT YOU AND YOUR INSTITUTION

1. The agency/institution you represent is (please select one):
   a) Central Bank/Monetary Authority
   b) Bank Superintendency/Financial Sector Authority
   c) Finance Ministry/Treasury
   d) Other (please specify: ________________________)

2. In which capacity are you responding to the survey? (please select one):
   a) As a Governor/Deputy Governor or Superintendent/Intendent or Minister/Deputy Minister
   b) As a Senior Advisor or Department Director
   c) On behalf of various institutions (e.g., central bank, bank superintendency, etc) that have come to a consensus on the answers to the questions
   d) Other (please specify ______________________________)

3. Your direct involvement with financial stability and/or financial development issues and the most recent FSAP assessment is best described as (please select all that apply):
   a) Part of my regular responsibilities in financial stability- and/or financial development-related policy issues (e.g., in the formulation or implementation of policy)
   b) I participated in discussions with the FSAP assessment mission
   c) No direct involvement, but familiar with financial stability and/or financial development issues in my country

FSAP MOTIVATION

4. To your knowledge, why did your country request an FSAP assessment? (Please select all that apply).

   a) To learn more about my country's financial sector
   b) To obtain an independent assessment of my country's financial sector
   c) Because of concerns over vulnerabilities in my country's financial sector
   d) As a signal to international capital markets
   e) Other countries in our region have had FSAPs
   f) To facilitate lending by International Financial Institutions(IFIs)/other donors
   g) To facilitate access to technical assistance from IFIs/other donors
   h) It is expected that every country should have an FSAP
   i) It was recommended by the IMF or World Bank
   j) The initial assessment was becoming dated (e.g., 4–5 years old)
   k) Don't know
   l) Other (please specify:_______________________________)

FSAP ANALYSIS

5. Which major features of the FSAP did you found most insightful? (Please select all that apply).

   a) Integrated financial sector analysis
   b) Assessment of financial sector regulatory frameworks and supervisory practices
   c) Assessment of financial system stability
   d) Assessment of development priorities
   e) Assessment of the impact of real sector developments and prospects on financial sector stability
   f) Input into reform agenda
   g) Don't know
   h) Other (please specify: _______________________________)

6. Which analytical component(s) of the FSAP did you found most useful? (Please select all that apply).

   a) Stress testing and system-level risk modeling
   b) Financial soundness indicators analysis
   c) Assessment of compliance with financial sector international standards and codes (e.g., Basel Core Principles for Effective Banking Supervision)
   d) Assessment of financial infrastructure (e.g., accounting & auditing standards, legal framework, payment systems, credit information systems, etc.)
   e) Assessment of the crisis management framework (e.g., bank resolution, systemic liquidity, contingency planning, etc.)
   f) Assessment of specific issues in key markets or sectors (e.g., banking sector competition and efficiency; pension systems; insurance sector)

g) Assessment of access to finance issues (e.g., infrastructure obstacles, Government promotion policies, etc.)
h) Don't know
i) Other (please specify:___________________________)

7. On a five-point scale where "5" means you strongly agree and "1" means you strongly disagree, please indicate your level of agreement with each of the following statements about the FSAP analysis:

	Strongly Agree				Strongly Disagree	Don't Know /NA
The FSAP provided adequate coverage of financial sector	5	4	3	2	1	[ ]
The FSAP provided adequate depth of analysis	5	4	3	2	1	[ ]
The FSAP analysis considered the unique circumstances of my country	5	4	3	2	1	[ ]
The FSAP analysis balanced financial sector stability issues with the development priorities of my country	5	4	3	2	1	[ ]
Overall, the FSAP analysis provided new analytical insights into my country's financial sector	5	4	3	2	1	[ ]

FSAP TEAM AND PROCESS

8. On a five-point scale where "5" means completely adequate and "1" means completely inadequate, please rate the FSAP team's technical skills.

Completely Adequate				Completely Inadequate	Don't Know/NA
5	4	3	2	1	[ ]

9. What is your opinion on the following in relation to the FSAP process?

Information on the FSAP before the start of the assessment	Adequate	Too much	Too little
Data requirements	Adequate	Too much	Too little
Process lead time for preparation	Adequate	Too much	Too little
Overall process time requirements	Adequate	Too much	Too little
Team knowledge about country specific circumstances	Adequate	Too much	Too little

FSAP RECOMMENDATIONS

10. On a five-point scale where "5" means you strongly agree and "1" means you strongly disagree, please indicate your level of agreement with each of the following statements about the FSAP recommendations:

	Strongly Agree				Strongly Disagree	Don't Know/NA
Recommendations were clear	5	4	3	2	1	[ ]
Recommendations were candid	5	4	3	2	1	[ ]
Recommendations were prioritized well	5	4	3	2	1	[ ]
Recommendations were sequenced well	5	4	3	2	1	[ ]
Recommendations were actionable with a reasonable effort on the authorities' part	5	4	3	2	1	[ ]

11.1 In your country, the *main* FSAP recommendations were subsequently (please select one):

a) implemented (Skip to 12)
b) partially implemented (Go to question 11.2)
c) not implemented (Go to question 11.2)
d) Don't know (Skip to 12)

11.2 Why do you think your country has not implemented all or some of the *main* FSAP recommendations? (Please select all that apply).

a) The FSAP assessment was recently completed
b) Disagreement with recommendations
c) Limited technical capacity to implement recommendations
d) Little political support in my country for recommendations
e) Lack of financial resources to implement recommendations
f) Too many recommendations
g) Difficulty in prioritizing recommendations
h) We do not consider recommendations to be a priority
i) Don't know
j) Other (please specify:____________________)

FSAP USEFULNESS

12. On a five-point scale where "5" means very satisfied and "1" means very dissatisfied, please rate the usefulness of the FSAP in the following areas:

	Very satisfied				Very dissatisfied	Don't Know/NA
Raising awareness on the need to take policy actions to preserve financial stability	5	4	3	2	1	[ ]
Expanding technical capabilities	5	4	3	2	1	[ ]
Prioritizing reform agenda	5	4	3	2	1	[ ]
Contributing to positive changes in the financial sector (e.g., improved coordination among supervisory agencies)	5	4	3	2	1	[ ]
Generating a public debate and consensus on financial sector reforms	5	4	3	2	1	[ ]
Reaching an understanding with legislature on financial sector reforms	5	4	3	2	1	[ ]
Improving the policy dialogue and support from World Bank	5	4	3	2	1	[ ]
Improving the policy dialogue and support from the IMF	5	4	3	2	1	[ ]
Overall usefulness to your country	5	4	3	2	1	[ ]

13. Please select ***up to three*** areas where the FSAP has been ***most*** useful to your country:

	Most useful
Identification of new financial sector risks	[ ]
Better understanding of the extent of risk exposures in the financial system and the systemic importance	
Identification of new financial sector developmental needs	[ ]
Better understanding of the developmental needs of the financial system	
Integrated view of my country's financial sector	[ ]
Prioritization of financial sector reforms	[ ]
Enabling reforms by contributing to a public debate	[ ]
Identification of technical assistance needs	[ ]
Learning new analytical techniques (e.g., stress testing)	[ ]
Learning best international practices	[ ]
Improved coordination among financial sector regulators	[ ]

14. Please select ***up to three*** areas where the FSAP has been ***least*** useful to your country:

	Least useful
Objective independent evaluation of my country's financial sector	[ ]
Identification of new financial sector risks	[ ]
Better understanding of the extent of risk exposures in the financial system and the systemic importance	
Identification of new financial sector developmental needs	[ ]
Better understanding of the developmental needs of the financial system	
Integrated view of my country's financial sector	[ ]
Prioritization of financial sector reforms	[ ]
Enabling reforms by contributing to a public debate	[ ]
Identification of technical assistance needs	[ ]
Learning new analytical techniques (e.g., stress testing)	[ ]
Learning best international practices	[ ]
Improved coordination among financial sector regulators	[ ]

15. In what ways has the FSAP been most effective in relation to your "***most useful***" choices above? (Please add attachments if more space is needed

FSAP OUTCOME AND FOLLOW-UP

16. In what ways has the FSAP contributed to a policy debate in your country? (Please select all that apply):

1. Encouraged discussion among government agencies
2. Promoted discussion between the government and financial sector stakeholders (e.g., bank associations)
3. Promoted discussion between financial sector authorities and legislators
4. Promoted discussion between financial sector authorities and the public at large
5. The FSAP has not contributed to the policy debate in my country
6. Don't know
7. Other (please specify): ________________________________

17.1. Did your country publish the results of the FSAP, i.e., the Financial Sector Stability Assessment report (the IMF's FSSA report) and Report on Observance of Standards and Codes (ROSC)?

1. Yes (Skip to question 18)
2. No (Go to question 17.2)

17.2. What was (were) the main reason(s) for that decision? (Please select all that apply):

a) Disagreement with the FSAP analysis and recommendations
b) Market-sensitive information in the document
c) Preferred that the FSAP be confidential
d) My government does not publish World Bank or IMF documents
e) My country participated in the pilot phase of the FSAP program, where publication was not envisaged
f) Other countries in the region did not publish the results of the FSAP
g) Publication would have complicated policy implementation
h) Don't know
i) Other (please specify:______________________)

18. On a 5-point scale where “5” means strongly agree and “1” means strongly disagree, please rate your level of agreement with each of the following statements regarding the IMF’s follow-up on the implementation of FSAP recommendations:

	Strongly agree				Strongly disagree	Don’t know/NA
Adequate follow up was provided by IMF Article IV missions	5	4	3	2	1	[ ]
Adequate follow-up was provided by IMF technical assistance missions when requested by country authorities	5	4	3	2	1	[ ]
Adequate follow-up was provided in the context of IMF-supported programs	5	4	3	2	1	[ ]
Adequate follow-up was provided in the context of FSAP updates	5	4	3	2	1	[ ]
There was no meaningful IMF follow-up	5	4	3	2	1	[ ]

19. On a 5-point scale where “5” means strongly agree and “1” means strongly disagree, please rate your level of agreement with each of the following statements regarding the World Bank’s follow-up on the implementation of FSAP recommendations:

	Strongly Agree				Strongly Disagree	Don’t Know/NA
Adequate follow-up was provided in the context of World Bank non-lending activities (e.g., analytical work, training, etc.)	5	4	3	2	1	[ ]
Adequate follow-up was provided by World Bank-facilitated technical support (FIRST, etc.)	5	4	3	2	1	[ ]
Adequate follow-up was provided in the context of World Bank lending to support financial sector reform	5	4	3	2	1	[ ]
Adequate follow-up was provided in the context of FSAP updates	5	4	3	2	1	[ ]
There was no meaningful World Bank follow-up	5	4	3	2	1	[ ]

20. On a five-point scale where “5” means you strongly agree and “1” means you strongly disagree, please rate your level of agreement with each of the following statements:

	Strongly Agree				Strongly Disagree	Don’t Know/NA
The depth of discussion on financial sector issues with Article IV missions substantially increased after the FSAP assessment	5	4	3	2	1	[ ]
Foreign investors’ interest in my country increased following the completion of the FSAP assessment	5	4	3	2	1	[ ]
Coordination among financial sector supervisors in the region has improved following the FSAP assessment	5	4	3	2	1	[ ]
The strategic view on the development of the financial sector was strengthened after the FSAP assessment	5	4	3	2	1	[ ]

STRENGTHENING THE FSAP

21.1. Has your country undertaken only one assessment (i.e., only an initial FSAP)?

a) Yes (skip to question 22)
b) No, more than one (go to question 21.2)

21.2. On a 5-point scale, where "5" means you strongly agree and "1" means you strongly disagree, indicate your level of agreement with each of the following statements relating to subsequent updates of the initial FSAP:

	Strongly Agree				Strongly Disagree	Don't Know/NA
The FSAP Update was more streamlined than the initial assessment (e.g., in terms of the demands placed on the authorities)	5	4	3	2	1	[ ]
The FSAP Update was *too* narrowly focused to provide a robust assessment of the financial system's strengths and vulnerabilities	5	4	3	2	1	[ ]
The assessment of compliance with international standards (e.g., Basel Core Principles for Effective Banking Supervision) for a selected group of principles in the FSAP Update was sufficient to provide a robust assessment of the regulatory and supervisory framework	5	4	3	2	1	[ ]
On the issues covered, the depth of analysis in the FSAP Update compared favorably to that in the initial FSAP	5	4	3	2	1	[ ]
The analytical techniques used to assess the stability of the system (e.g., stress testing) in the FSAP update have improved since the initial FSAP	5	4	3	2	1	[ ]
The assessment of financial sector infrastructure (e.g., credit information systems, payment systems) has improved compared to previous FSAP assessments	5	4	3	2	1	[ ]
Relatively comprehensive FSAP Update assessments should be conducted at least once every 5–6 years	5	4	3	2	1	[ ]

22. On 5-point scale, where "5" means you strongly agree and "1" means you strongly disagree, please indicate your level of agreement with each of the following statements:

	Strongly Agree				Strongly Disagree	Don't Know/NA
1. FSAPs should continue to be voluntary	5	4	3	2	1	[ ]
2. If FSAPs become mandatory, the frequency of assessment should be primarily based on the systemic importance of the country	5	4	3	2	1	[ ]
3. Publication of FSAP results (i.e., the Financial Sector Stability Assessment—the IMF's FSSA report—and ROSCs) should remain voluntary, but with a presumption for publication	5	4	3	2	1	[ ]

23. Regarding publication of FSAP results, what are your views regarding the rules on deletions and corrections to FSSA reports and ROSC? (Please select all that apply).

1. I am not aware of them
2. They do not offer adequate protection against adverse market reactions
3. They are not robust enough to prevent the possibility of misinterpretation
4. They involve negotiation with Fund staff
5. Other comments: ______________________________________

24. Please provide any additional suggestions/comments based on your experience with FSAP that you feel may improve the program in the future (add attachments if needed).

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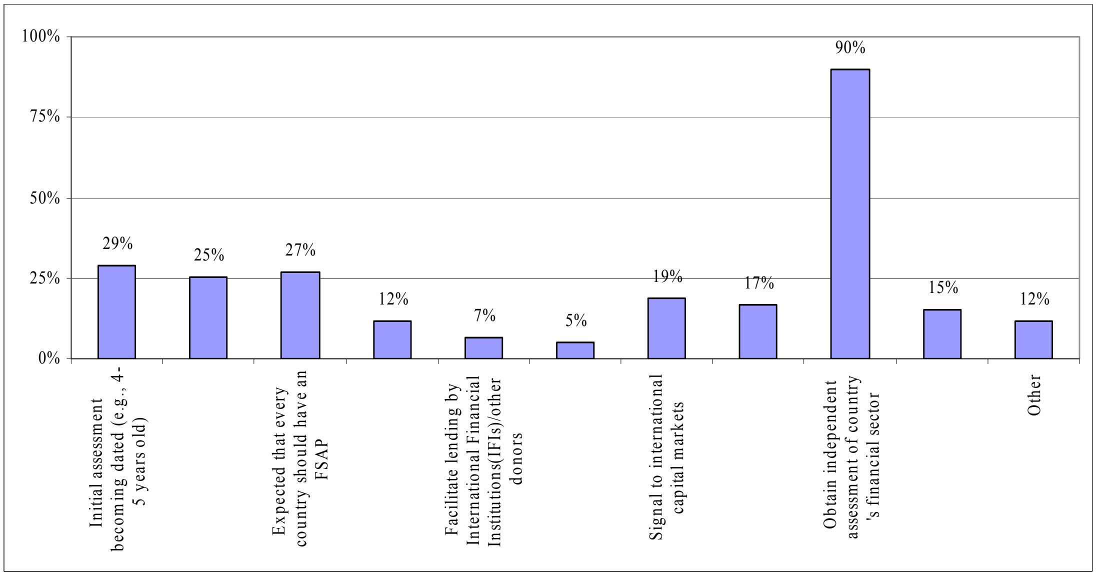
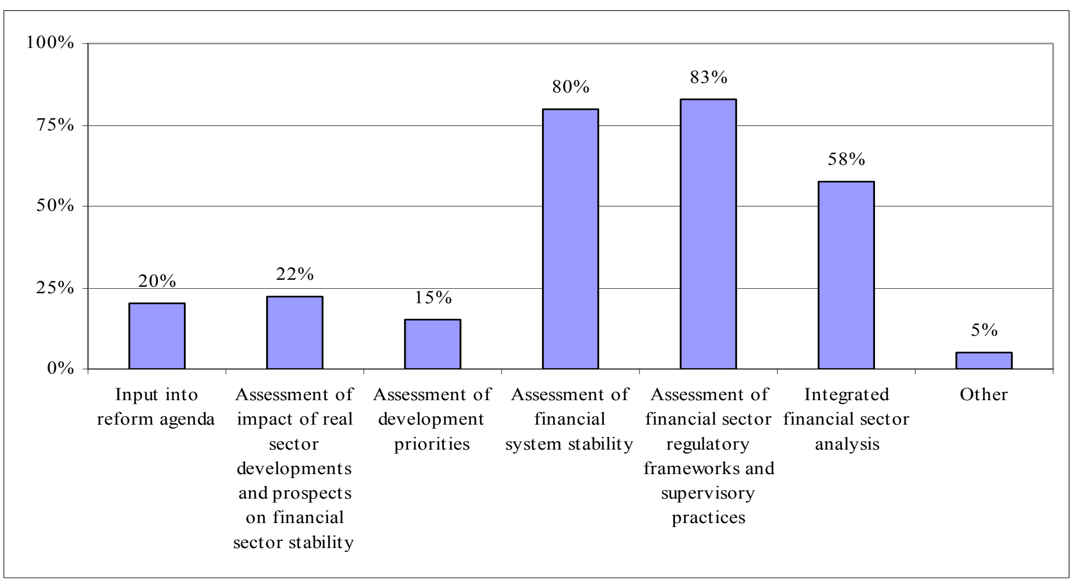
APPENDIX II: DETAILED RESPONSES TO SURVEY

Figure 1. Why Did Your Country Request an FSAP Assessment?



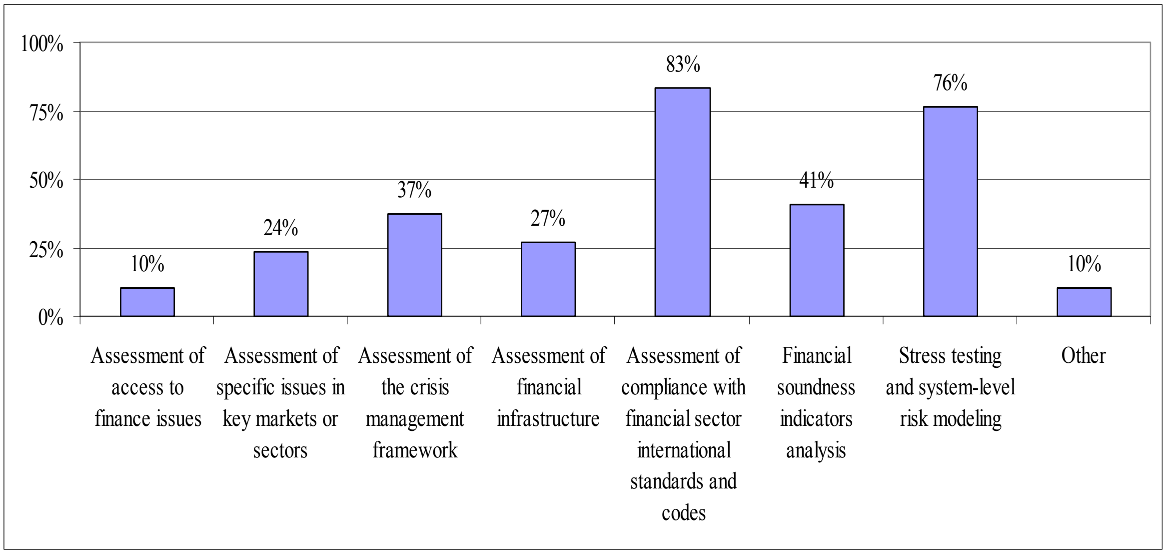
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 2. Which Are the Most Insightful Features of the FSAP?



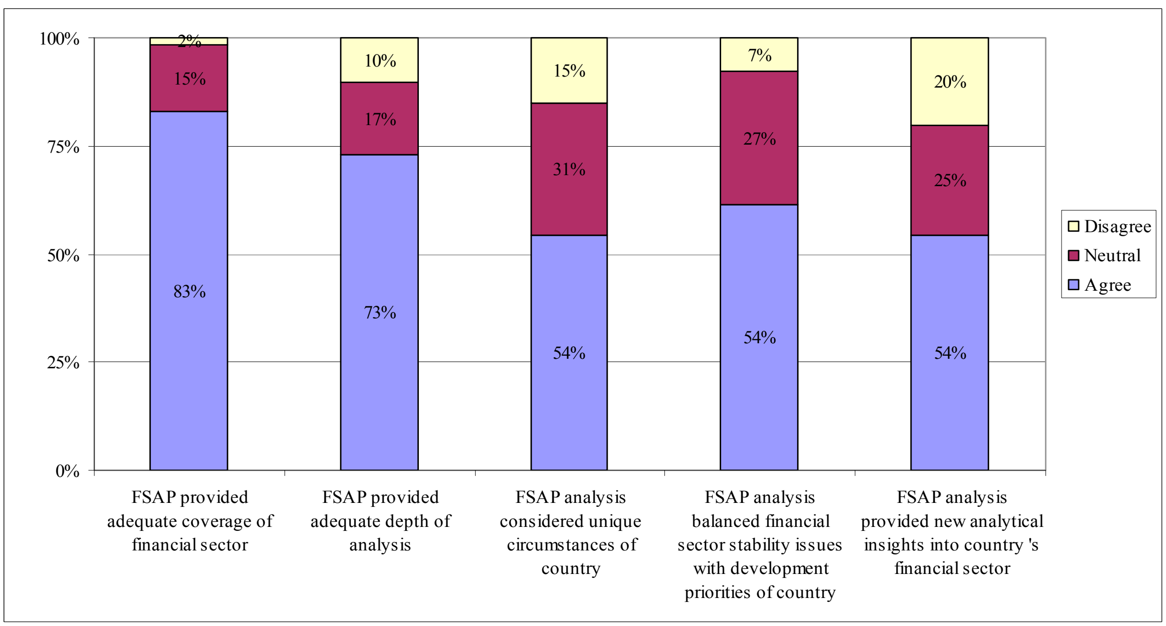
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 3. Which Are the Most Useful Analytical Components?



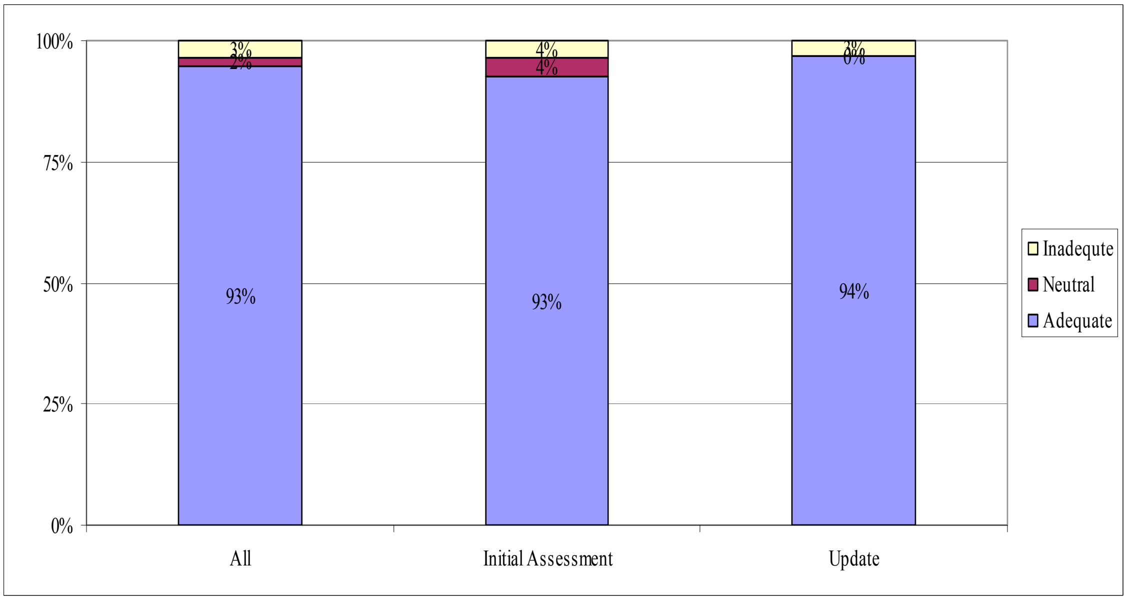
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 4. Coverage and Analysis (All Assessments)



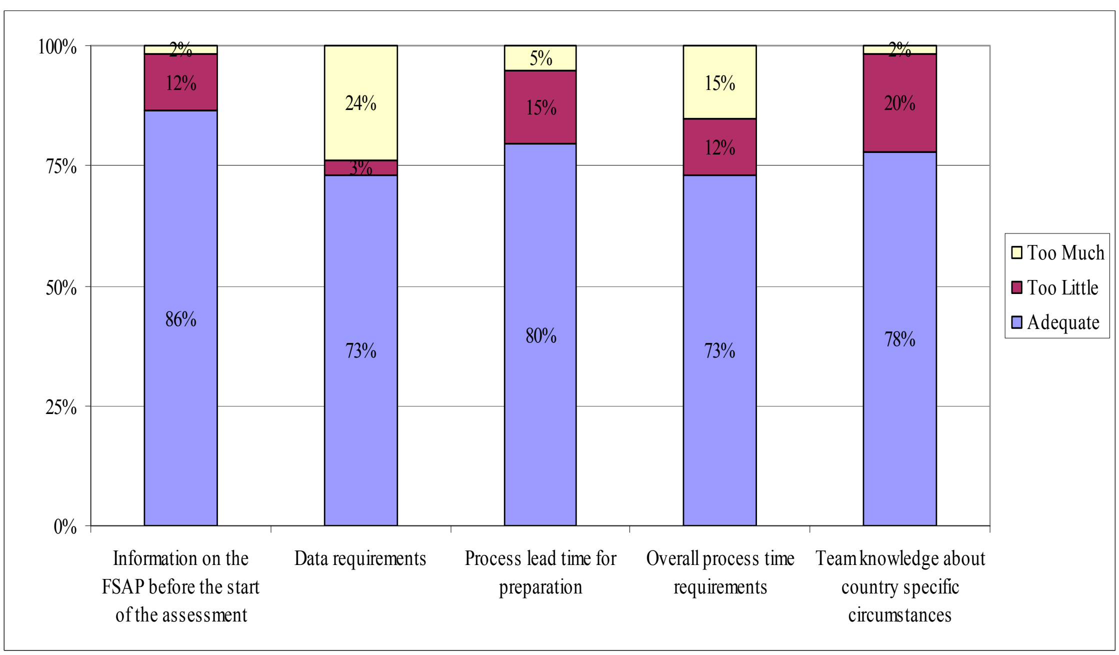
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 5. FSAP Team's Technical Skills



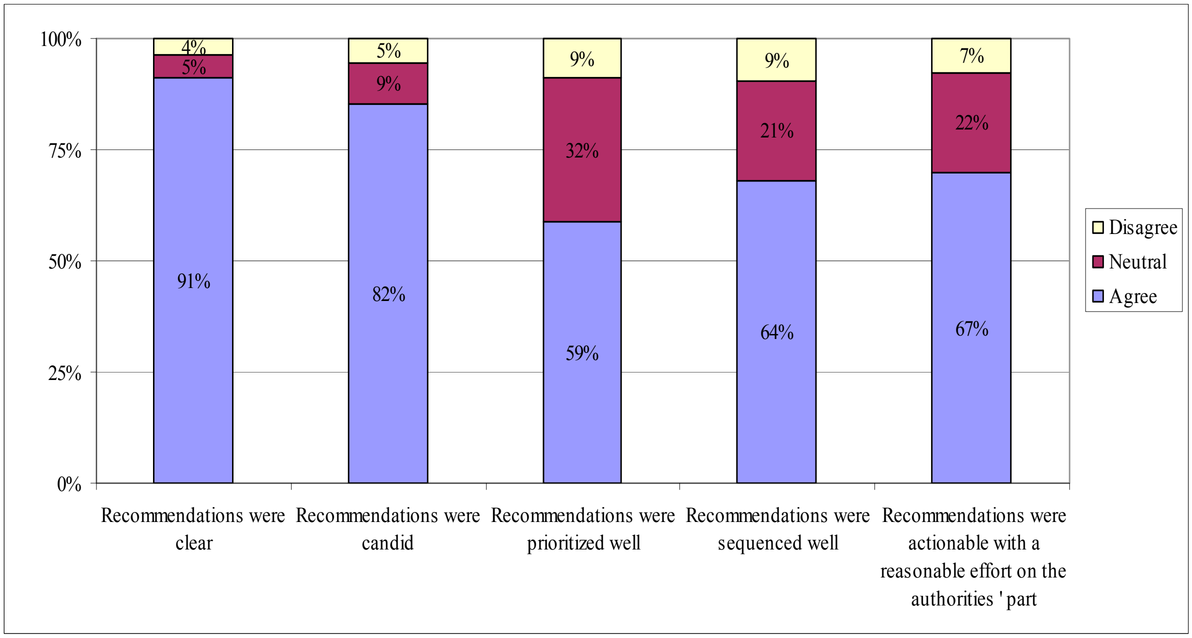
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 6. Views on FSAP Process



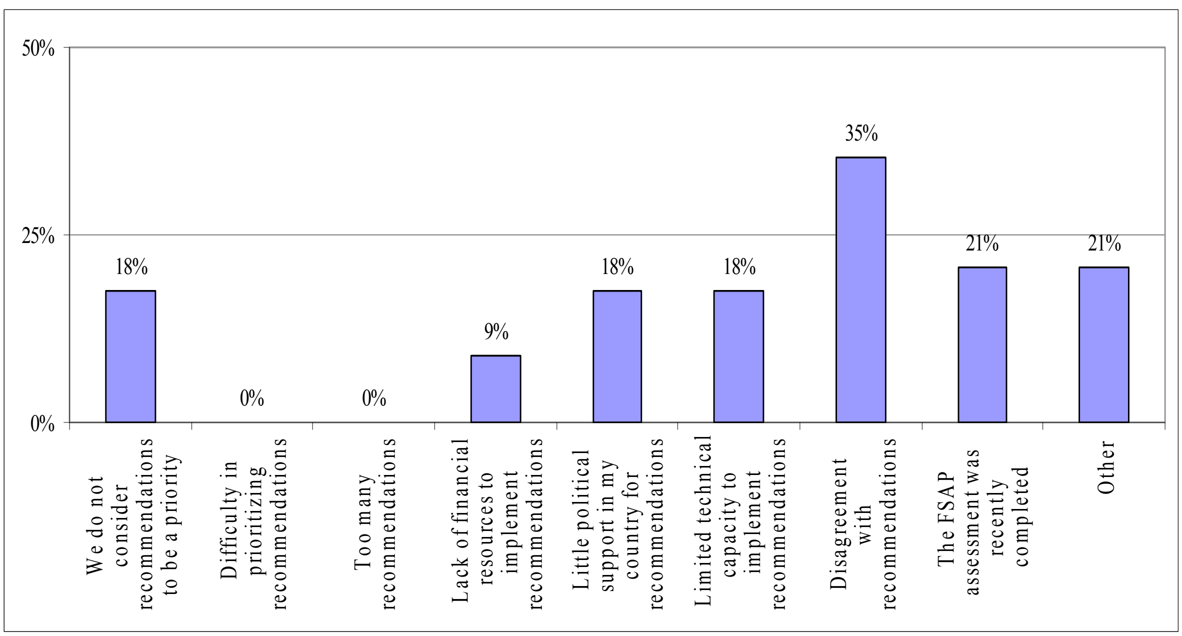
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 7. FSAP Recommendations



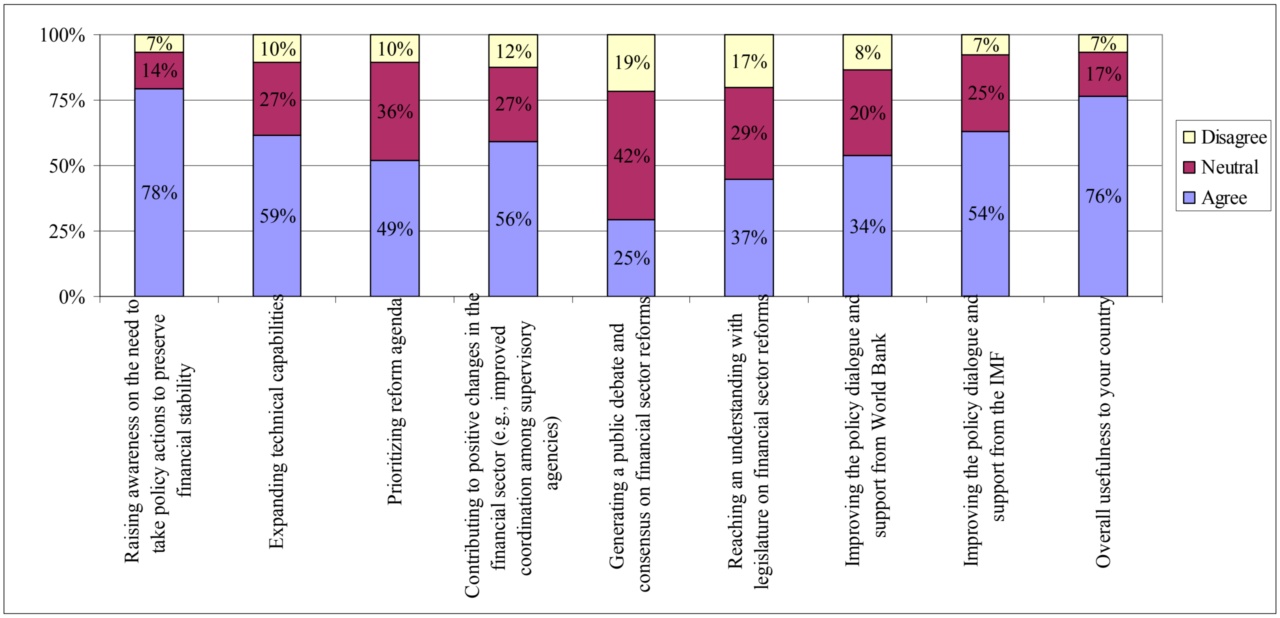
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 8. FSAP Recommendations—Why Not Full Implementation?



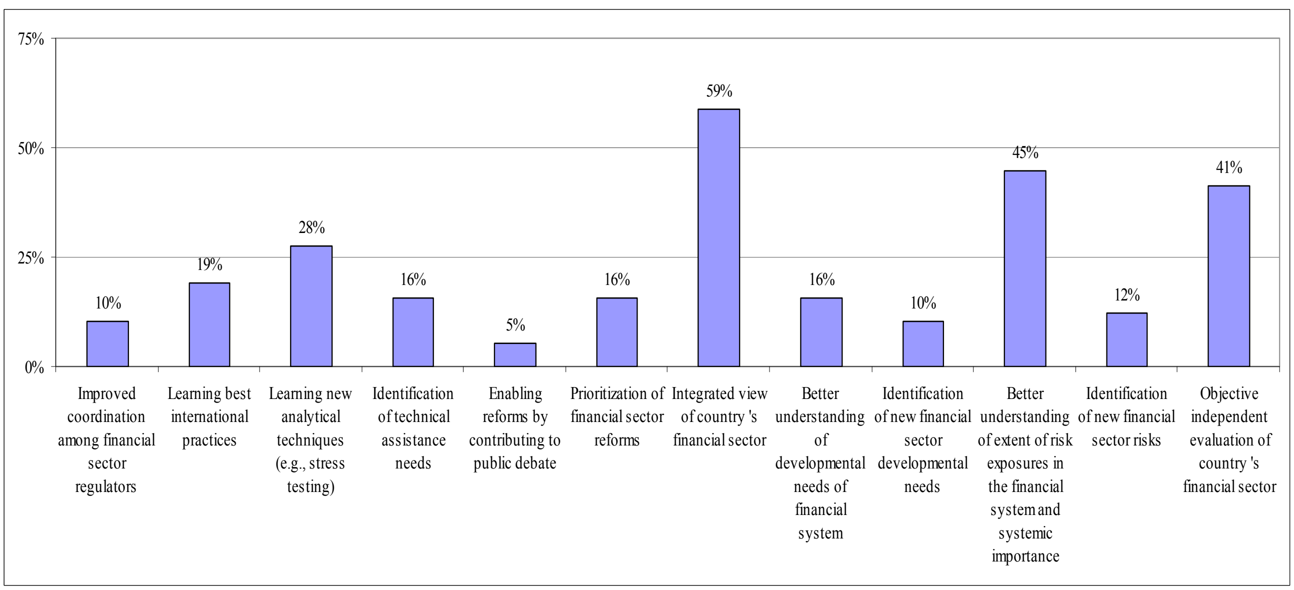
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 9. FSAP Usefulness



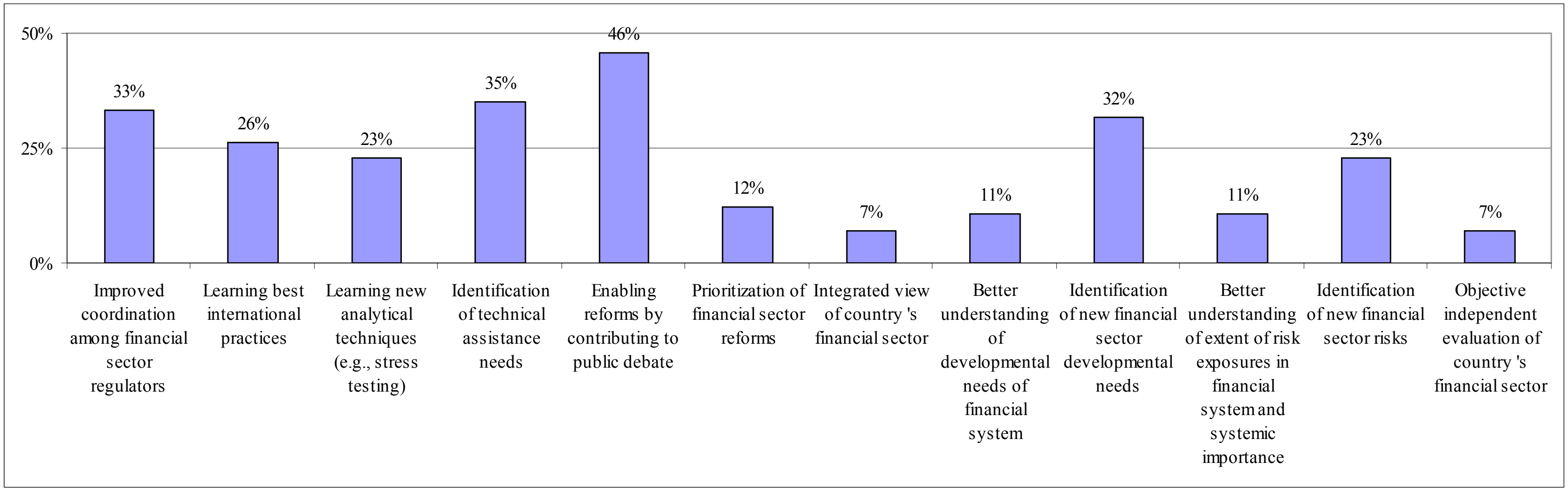
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 10. Most Useful FSAP Areas



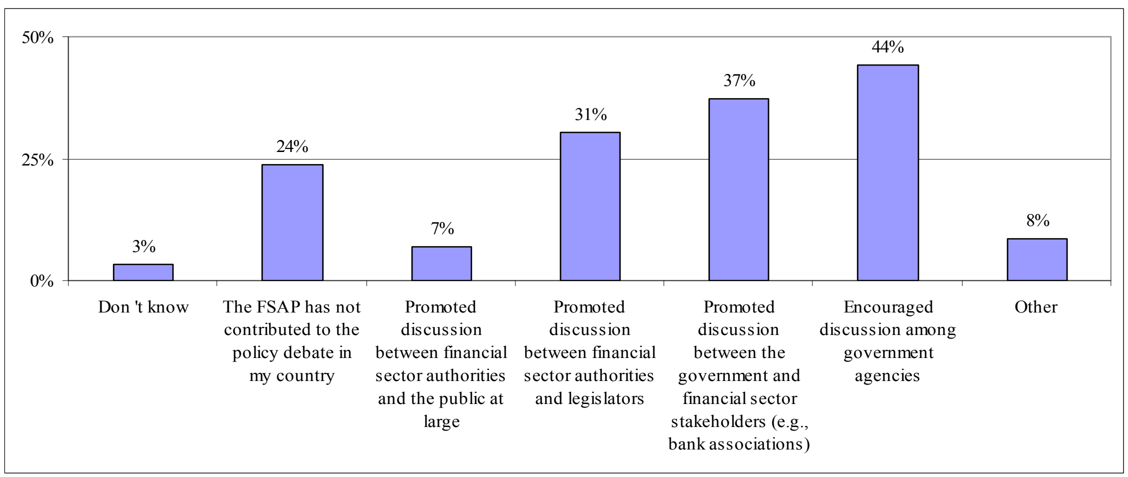
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 11. FSAPs Least Useful Areas



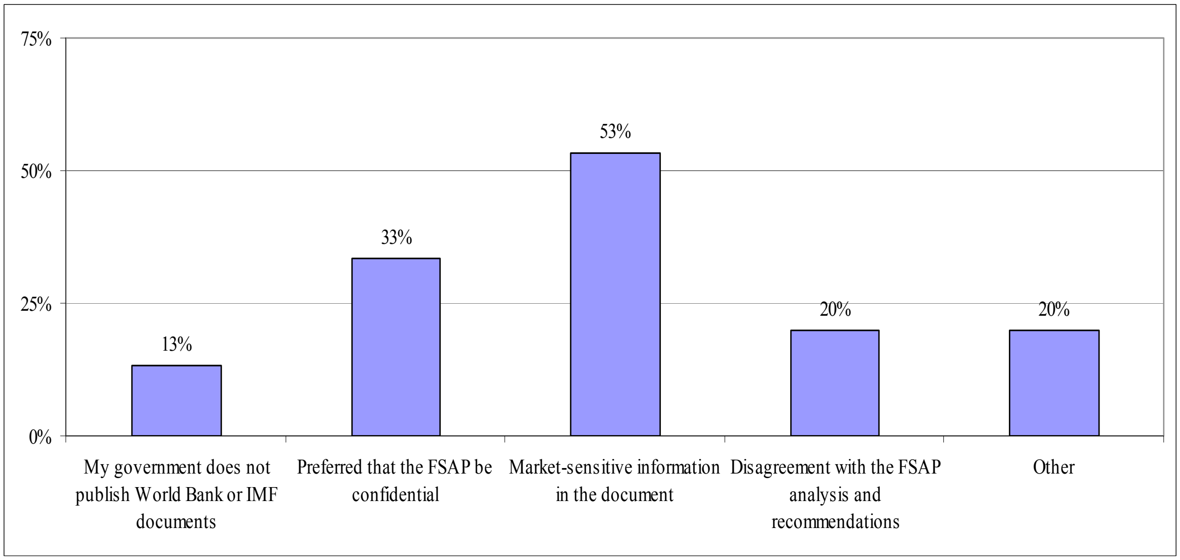
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 12. FSAPs Contribution to Policy Debate



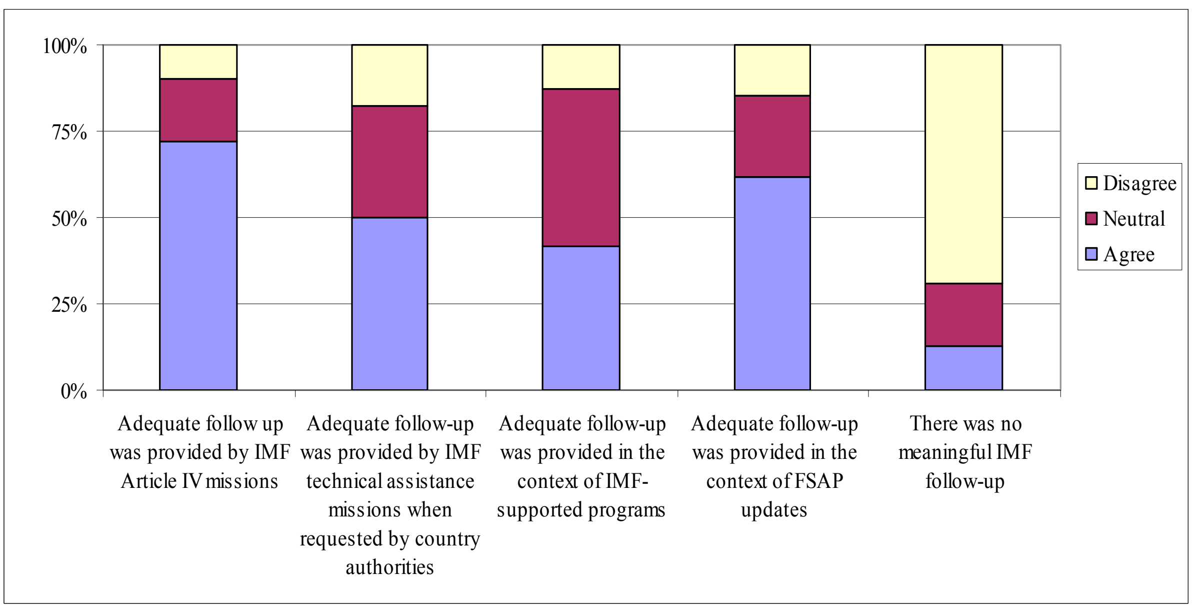
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 13. Why Not Publishing FSSAs?



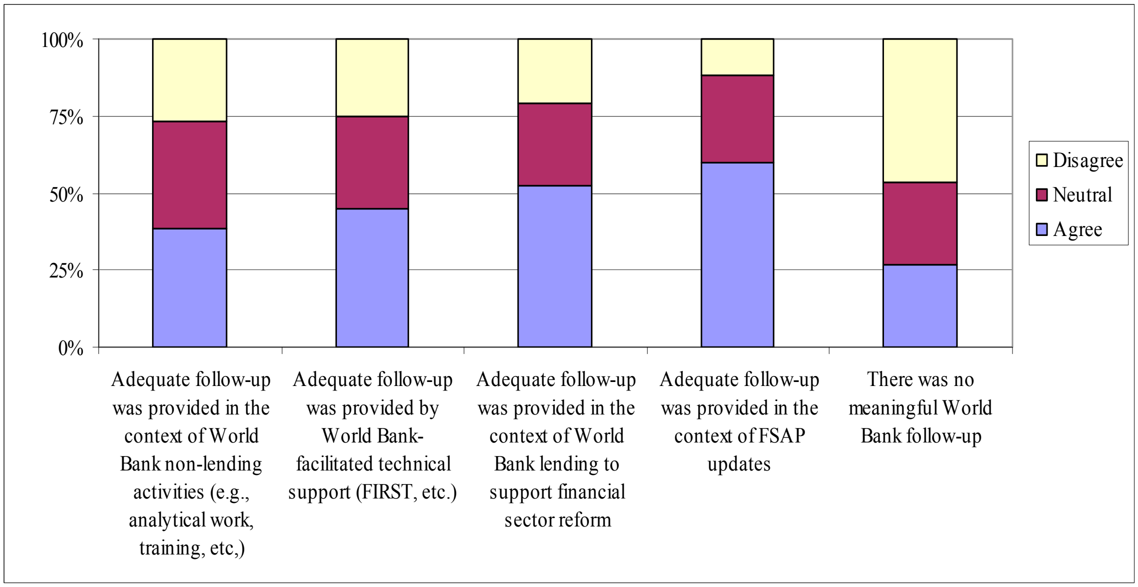
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 14. IMF FSAP Follow-Up



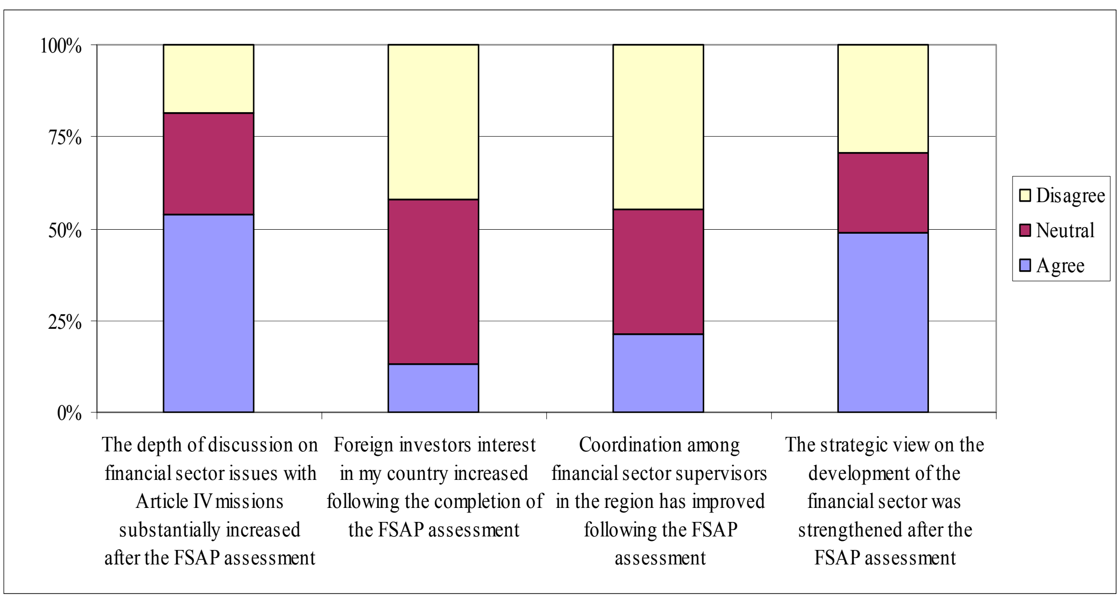
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 15. World Bank FSAP Follow-Up



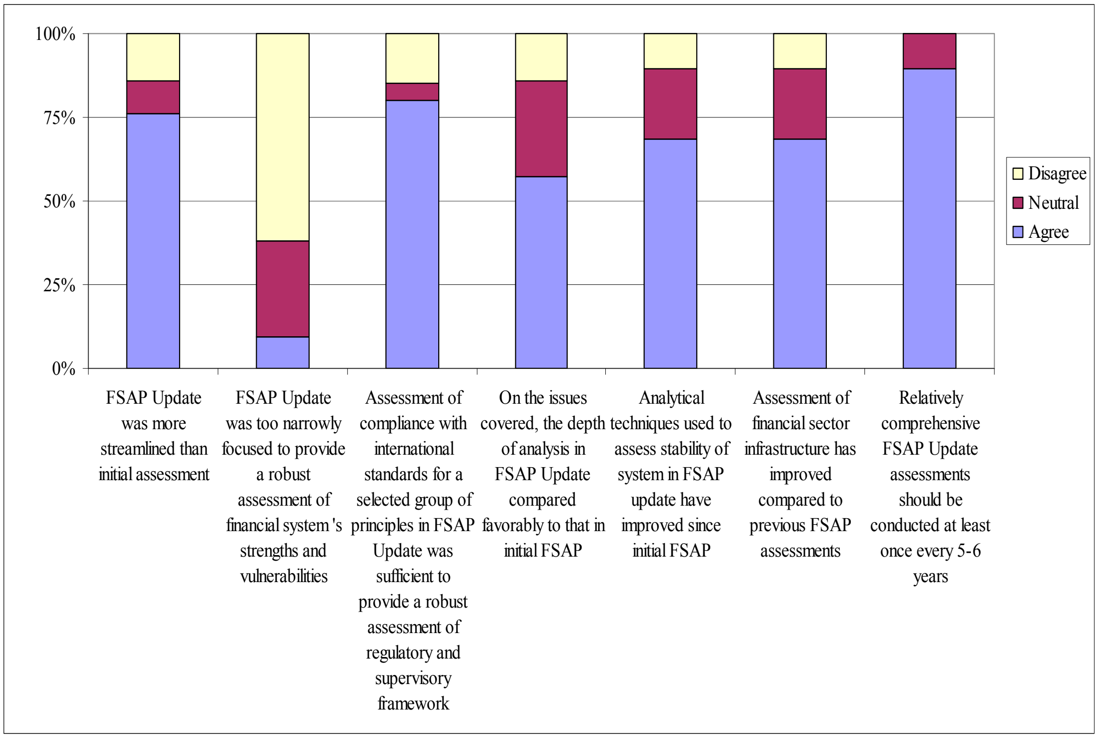
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 16. FSAP Impact on Selected Issues



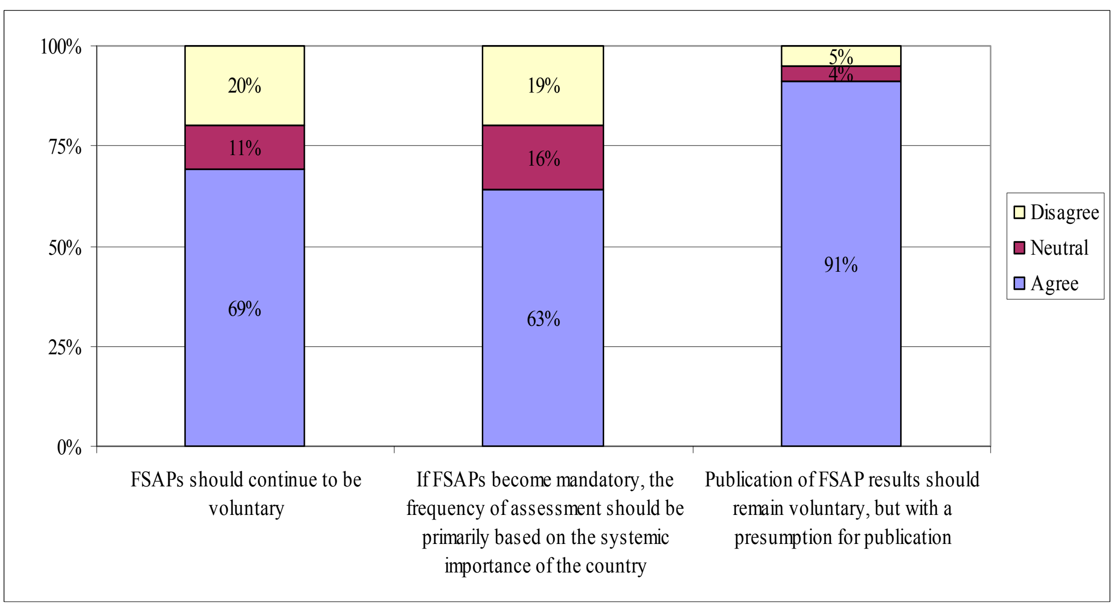
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 17. Views on FSAP Updates



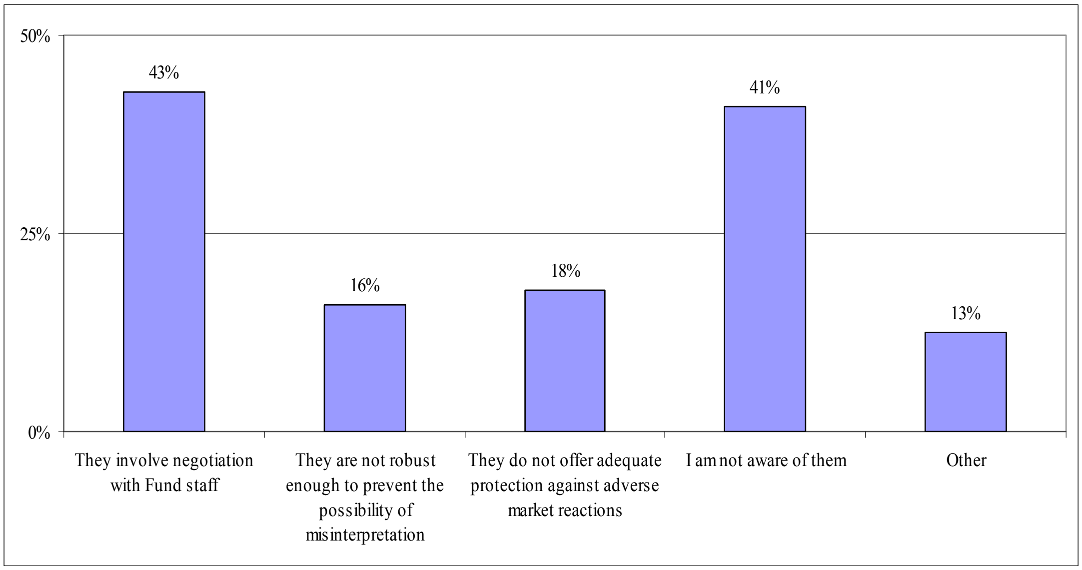
Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 18. FSAPs Voluntary or Mandatory?



Source: FSAP Survey and IMF/WB Staff Calculations.

Figure 19. Views on IMF's Policies on FSAP Publication



Source: FSAP Survey and IMF/WB Staff Calculations.