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BACKGROUND PAPER

BP/14/09

The IMF Response to the Global Crisis: Assessing Risks and Vulnerabilities in IMF Surveillance

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The IMF Response to the Global Crisis: Assessing Risks and Vulnerabilities in IMF Surveillance

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October 8, 2014

JEL Classification Numbers:

Keywords:

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ABBREVIATIONS

BIS	Bank for International Settlements
CGER	Consultative Group on Exchange Rates
DSA	Debt Sustainability Analysis
ESR	External Sector Report
EWE	Early Warning Exercise
EWG	Early Warning Group
EWL	Early Warning List
FDMD	First Deputy Managing Director
FSB	Financial Stability Board
FSI	Financial Soundness Indicator
GDP	Gross domestic product
GDVI	Growth Decline Vulnerability Index
GFSR	*Global Financial Stability Report*
GPA	Global Policy Agenda
G-RAM	Global Risk Assessment Matrix
IEO	Independent Evaluation Office of the IMF
IMFC	International Monetary and Financial Committee
LIC	Low-Income Countries
Management	Managing Director, First Deputy Managing Director, and three Deputy Managing Directors
RAM	Risk Assessment Matrix
REO	*Regional Economic Outlook*
RWG	Risk Working Group
S5	The five systemically most important countries/regions: China, the euro area, Japan, the United Kingdom, and the United States
SIFI	Systemically Important Financial Institutions
TSR	Triennial Surveillance Review
UMP	Unconventional Monetary Policy
VEA	Advanced Economy Vulnerability Exercise
VEE	Emerging Market Vulnerability Exercise
VE-LIC	Low-Income Country Vulnerability Exercise
WEMD	World Economic and Market Developments
WEO	*World Economic Outlook*

Executive Summary

This paper analyzes the IMF's approach to assessing risks and vulnerabilities as part of its multilateral and bilateral surveillance, especially the changes introduced following the 2007–08 global crisis. A variety of new exercises have been introduced to fill gaps existing before the crisis, and there is a strong consensus that the Fund's analysis has greatly improved. However the analytical framework remains a work in progress and it will be critical to ensure that the current strong focus on risks and vulnerabilities is maintained, perhaps even more so in quieter times when vulnerabilities may be less evident and the linkages between them harder to identify; and when authorities may be less receptive to warnings.

Over the last five years, the risk assessment framework has expanded dramatically, filling critical gaps but also becoming very complex, involving nine different exercises managed in five separate departments. The volume of analysis that results is very difficult to absorb, both for policymakers and for IMF staff themselves, and substantial efforts are required to ensure consistency (which is not always achieved). As immediate priorities, the IMF should produce a short integrated summary as background for each IMFC meeting; over time, it should also seek to consolidate and simplify the system, and strengthen integration (for instance through a small coordinating unit reporting directly to the FDMD). Also, it needs to further strengthen risk analysis in Article IV consultations.

The EWE is an important innovation which is generally highly praised by those who attend. But the IMF needs to find ways to disseminate its results more widely, as many senior policymakers are unaware of them due to the restricted attendance and rather limited debriefing by those who do attend; the Fund should also consider whether there is scope to provide more information to the public more broadly. Also, there is little integration of the regulatory and macro-financial issues covered respectively by the FSB and the IMF. It will also be important to find ways to ensure that more extreme tail risks—not generally covered by the EWE—remain on policymakers' radar screens.

A culture of openness is critical to avoid group think and for effective risk assessment (see IEO, 2011). While this has improved at senior levels, the 2013 Staff Survey suggests that further efforts are needed at more junior levels (less than 20 percent of A11-A15 staff responded favorably to the statement that the Fund had established a climate where employees can challenge the traditional way of doing things or to the statement that at the Fund it was better to take a calculated risk and fail than not to take a risk at all).

Many country authorities indicated that the models and systems used by the IMF to identify risks are a "black box," which diminishes their policy traction. To address this concern, the IMF could periodically produce an accessible summary description of its main exercises and their methodologies, highlighting both strengths and weaknesses. This would help improve the transparency and credibility of the Fund's work and provide opportunities for internal and external feedback on the system as it evolves in the future.

I. INTRODUCTION

1. This paper describes the changes in the IMF's approach to assessing multilateral and bilateral economic risks and vulnerabilities following the 2007–08 global financial crisis, and provides a preliminary assessment of their effectiveness to date. It is based on interviews with country authorities, IMF Executive Directors, IMF Management, and Fund staff in both functional and area departments.[1]

2. An evaluation of the Fund's new approach to assessing risks and vulnerabilities at this time faces two particular challenges. First, the reforms have only been operational for a short time (at most five years and often less), and in most cases continue to evolve. Second, they have so far operated during a period of crisis, when attention is almost by definition focused on the baseline; in quieter times, the challenges related to identifying risks and vulnerabilities—and achieving traction on recommendations to address them—are likely to be rather different. Consequently, only tentative conclusions can be drawn from the operational experience to date. That said, it is nonetheless timely to review the system and the culture in which it operates; indeed, given the importance of these exercises, it would be desirable to identify any weaknesses well before there is enough data to formally assess the track record.

3. The paper is divided into four main parts. Section II provides a brief overview of the approach to risk assessment before the crisis and its shortcomings, and summarises the main reforms that have been adopted. Section III describes the individual exercises that now comprise the Fund's approach to assessing risks and vulnerabilities—which, as many interviewees noted, are not well understood outside the Fund—and how they have evolved since the crisis. Section IV considers the risk assessment process as a whole and the culture in which it operates, using as a case study the Fund's assessment of risks to emerging markets in recent years; and Section V contains concluding thoughts on areas where the framework could be strengthened. While the paper describes the reforms to both multilateral and bilateral assessment of risks and vulnerabilities, given resource constraints the analysis focuses primarily on the multilateral side, where the bulk of the changes have taken place. For similar reasons, the paper does not seek to review and draw lessons from risk assessment practices in other institutions, which would be a worthwhile area for future work (and one where IMF staff have already taken initial steps).

II. BACKGROUND

4. Before the crisis, risk assessment in the Fund took place primarily through the *World Economic Outlook* (*WEO*) and *Global Financial Stability Report* (*GFSR*), which assessed global risks, with bilateral surveillance tasked with covering individual country risks. This was supported by two internal cross-country exercises: an emerging market vulnerability exercise (VEE) which looked at emerging market risks, and the Consultative Group on

[1] The paper is based on documents available through March 2014.

Exchange Rates (CGER), which assessed external imbalances and exchange rate misalignments. Periodic updates on global and country developments, including emerging risks, were also provided to the Executive Board through confidential World Economic and Market Developments (WEMD) and Country Matters briefings by relevant Department Directors.

5. As is now well recognised, this system had many weaknesses. There was little real assessment of vulnerabilities in advanced countries, where crisis risks were implicitly believed to be very low; limited analysis of spillovers, especially outward spillovers from systemic countries; and no overarching global risk assessment structure. As stressed in IEO (2011), these structural weaknesses were exacerbated by cultural factors, notably internal silos, a tendency toward group think, and a lack of macro-financial expertise. These shortfalls were also evident in bilateral surveillance, with the 2008 Triennial Surveillance Report (TSR) assessing that only about a third of Article IV reports since 2004 contained a "satisfactory" discussion of baseline risks (Table 1).

6. The Fund's failure to highlight the vulnerabilities which led to the 2007–08 financial crisis prompted a wide-ranging series of reforms. These have included the introduction, at the request of the G-20, of an Early Warning Exercise (EWE), conducted jointly with the Financial Stability Board (FSB), designed to identify tail risks and "connect the dots" between different risks and vulnerabilities; vulnerability exercises for advanced countries (VEA) and for less developed countries (VE-LIC); spillover reports to assess the impact of outward spillovers from systemic countries; the *Fiscal Monitor*—a third Fund flagship report—tasked with assessing fiscal sustainability issues; a Pilot External Sector Report, which extends and deepens the earlier CGER exercise; and a Tail Risk Group consisting of A-level staff [2] outside the regular risk exercises, tasked with looking at tail risks from a fresh perspective.

7. Improvements in risk assessment and spillovers analysis were also set as central objectives in Triennial Surveillance Reviews for bilateral surveillance (Table 1).[3] To support this, a variety of new tools have been developed, including the introduction of Risk Assessment Matrices (RAMs) in individual Article IV consultations to summarise risks and their possible impact; a global risk assessment matrix (G-RAM), defining a consolidated list of global risks for use in operational work; and improved public debt sustainability analysis (DSA). This has been accompanied by efforts to strengthen interdepartmental collaboration and break down silos, including the introduction of weekly Surveillance Committee meetings with the Economic and Financial Counselors, and with Management, and widespread use of interdepartmental committees as a coordination device, including the establishment of an interdepartmental Risk Working Group (RWG) to help coordinate the Fund's work on risks.

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[2] Staff below the rank of division chief or advisor in the IMF.

[3] Mainstreaming spillover/risk analysis in the Fund's surveillance was also a key objective of the Integrated Surveillance Decision, which was approved by the Executive Board in 2012.

Table 1. Triennial Surveillance Review: Assessments and Recommendations on Risks and Spillovers, 2008–12

	2008 TSR Assessment	2008 TSR Recommendations	2011 TSR Assessment	2011 TSR Recommendations	2012 TSR Progress Report Assessment
Risks	Only 60 percent of staff reports presented short term economic outlook, including risks, in a substantiated way. Only about 36 percent of reports contained a "satisfactory" discussion of baseline risks; key shortfalls included focusing on most obvious risks, missing crucial external risks, long and unprioritized lists, excessive hedging.	Insufficient attention to risks around the baseline—connect dots better, think the unthinkable, highlight known unknowns. More systematic assessments and effective presentations of risks around the baseline. More emphasis on how to insure against low-probability but high cost risks; Better incorporation of the risk analysis conducted at the multilateral or regional levels.	Focus on risks has improved, but clear scope to further deepen analysis; Limited use of multilateral products and risk analysis in bilateral surveillance; Coverage of risks in multilateral products not well cross referenced, and LIC-specific risks underplayed.	In-depth risk assessments in Article IVs and multilateral flagships, including more explicit discussion of risks in text, drawing on existing risk assessment tools (EWE, VEs) supplemented with RAMs in Article IV reports; Coverage of risks in multilateral products, notably *WEO*, should be enhanced, including those identified in *GFSR*.	Risk assessment strengthened in multilateral and bilateral products; RAMs included in many Article IVs, and appear to have helped sharpen risk assessments; Staff has begun to draw more on EWE, VEA, VEEs; G-RAM introduced; More prominent risk analysis in multilateral/regional surveillance products, but not fully consistent. Risk scenarios could be presented more clearly.
Interconnections/ Spillovers	Progress on treatment of spillovers "uneven", but together with more cross-country analysis, enhanced multilateral perspective in bilateral surveillance More staff reports refer to influence of "at least one" global factor for inward spillovers; discussions of outward spillovers for systemic countries "few and far between"	Large unmet demand for inward—even more outward—spillovers and cross-country analysis; Better leverage analytical findings of *WEO*/*GFSR*; improve cross-country information sharing; reward cross-country work.	Integration of top down analyses and policy recommendations with country level surveillance needs to be strengthened. Analysis of spillovers has been wanting (particularly of transmission channels). Cross-country analysis also too limited (only 30 percent of Article IVs draw lessons from experience of other countries).	Regular analysis of spillovers and cross-country issues. Work on spillovers should continue (including pilot spillover reports) with modalities evolving with experience. Bring interconnected countries to the Board in clusters or even as multi country Article IV consultations.	Good progress on building analytical basis—2012 Spillover Reports, papers on macroeconomic and financial linkages (but this work is preliminary and focused on networks) Uneven Article IV coverage, little discussion of potential policy implications. Cross-country analysis still limited. No progress bringing interconnected countries to Board in cluster (logistical problems).

8. The Fund's analysis of risks and vulnerabilities can, of course, be only as good as the data it is based on. Data shortfalls may not have been the main reason that the Fund and others missed the Great Recession, but the crisis nonetheless revealed significant gaps, leading to the G-20/IMFC Data Gaps Initiative managed jointly by the Fund and the FSB. One element of this initiative is the expansion of the IMF's Financial Soundness Indicators (FSIs) to cover all G-20 countries, along with broadening their coverage—which previously had significant weaknesses—including to non-depository financial institutions.[4, 5]

III. How the IMF Assesses Global and Country Risks

9. The IMF's current approach to risk assessment has significantly expanded since the crisis—indeed, it now involves nine major exercises[6] led out of five different departments. As illustrated in Figure 1, the system has three basic layers:

- The published outputs—the multilateral flagships, the Article IV consultations and Regional Economic outlooks, and G-20 papers. Broadly speaking, these cover global baseline risks, and in practice some tail risks as well.
- The confidential outputs—the EWE presented to senior policymakers at IMFC, and the informal Executive Board WEMD and Country Matters briefings. In principle, these should cover the full gamut of baseline and tail risks.
- The analytical inputs to this work, which include the vulnerability exercises, the G-RAM and the Tail Risk Group (which are restricted to Management and staff) and the spillover reports and the Pilot External Sector Report (which are published).[7]

Particularly striking, as illustrated by the number of exercises in bold green font in Figure 1, is the wholesale revamping of the analytical inputs, with each one either new or significantly reformed since 2008. The remainder of this section describes these exercises in more detail, and how they have evolved since the crisis.

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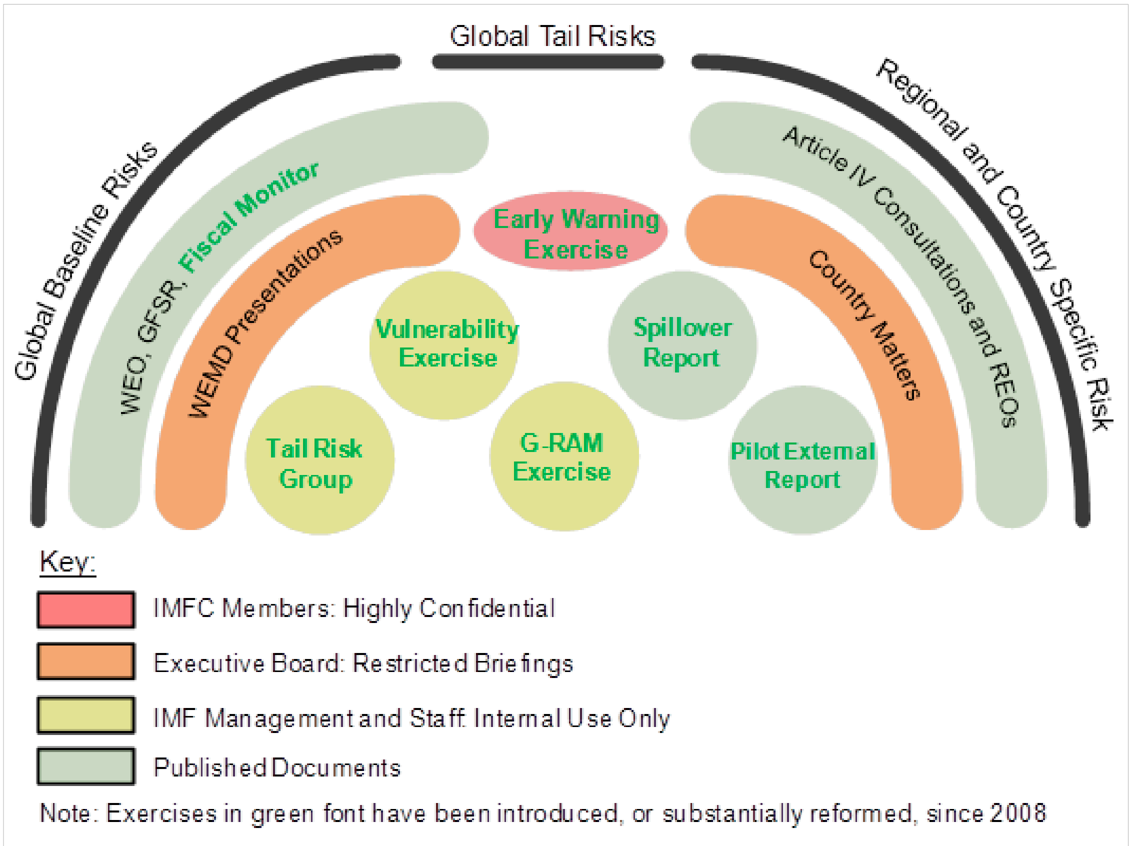
[4] Data issues are the subject of a separate evaluation, and therefore will not be discussed in detail in this paper.

[5] See "Modifications to the Current List of Financial Soundness Indicators," IMF (2013) for a discussion of the revisions to FSIs, and "Addressing Information Gaps," IMF Staff Position Note SPN/09/06 for a discussion of the weaknesses that existed in the system previously.

[6] The three vulnerabilities exercises are counted as one exercise for this calculation.

[7] Of course, the objectives of the Spillover and Pilot External Sector reports in particular go well beyond providing inputs to risk assessment.

Figure 1. IMF Exercises to Address Risks and Vulnerabilities



A. The Multilateral Flagships

10. The Fund's multilateral flagship reports—the *WEO*, *GFSR*, and the recently created *Fiscal Monitor*—are central vehicles for defining and analyzing risks to the global outlook. The *WEO* seeks to take a comprehensive approach to risks, with the *GFSR* covering risks to global financial stability and the *Fiscal Monitor* medium-term risks to fiscal sustainability. In general, the flagships focus on high probability risks to the baseline, although tail risks are also discussed, particularly in the *GFSR*.

11. Risk assessment in the flagship publications takes place as follows:

- In the *WEO*, discussion of risks begins at the initial meeting on the forecast meeting, and continues throughout the *WEO* round (including through regular contact with *GFSR* staff). The key tools used include fan charts, whose analytical underpinnings have become steadily more sophisticated, accompanied by much increased use of model-generated scenarios to illustrate risks, on occasion jointly with the *GFSR*.

- In the *GFSR*, risk assessment begins with market intelligence gathering, both through *GFSR* missions and MCM representatives in key financial centers. Key analytical tools include the global financial stability map process—providing a quantitative representation of risks in key areas/markets—and scenario analysis of bank capital and deleveraging. Generally, the *GFSR* has a more focused approach to risks than the *WEO*—it does not seek to cover the waterfront—and has more extensive discussion of tail risks.[8]

- The *Fiscal Monitor* was first produced in 2009, and focuses on medium-term fiscal vulnerabilities, based on a fiscal sustainability exercise, in addition to addressing fiscal developments and short-term fiscal risks. It is in some ways the most explicit of the three flagships, providing specific fiscal vulnerability ratings for advanced and major emerging market countries.[9]

All three flagship publications are discussed at the Executive Board, and published just before IMFC meetings. From October 2012 the central messages have been summarized in the Managing Director's Global Policy Agenda (GPA), presented at IMFC meetings, which draws on these publications to identify the policy challenges faced by the membership and outline responses that are needed to address these challenges by the Fund and its members.

12. In the past, there have been issues of both duplication and message coordination among the three flagships. This has led to various efforts to improve coordination, including through regular meetings with Fund Management during the production process, and most recently the introduction of a "Flagship Compact" setting out principles guiding the division of material and messages across the three reports.[10] Most external interviewees felt that the Fund's key messages on risks and vulnerabilities had become clearer and more consistent, although many found the volume of material excessive and difficult to absorb (see Section IV.A.iii below). A review of the key messages in the various Fund products in October 2013 (Table 2) shows a reasonable degree of consistency, although—as discussed in Section IV.B below—there were important differences on one key issue in the preceding six months, both between the flagships themselves, and with other Fund exercises.

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[8] See, for example, Box 1.1 of the October 2012 *GFSR*.

[9] See Tables 3 and 4 of the October 2013 *Fiscal Monitor*.

[10] Under the Compact the *WEO* is expected to assess global macroeconomic developments, integrating the financial policies and fiscal conditions relevant for such analysis in a general equilibrium framework. The *GFSR* is expected to assess the state of global financial stability, and how it is affected by the macroeconomic environment; systemically important balance sheets relevant for financial stability; and multilateral advice about financial policies. The *Fiscal Monitor* is expected to assess short- and longer-term fiscal developments, focusing in particular on fiscal sustainability risk, tax and expenditure developments, fiscal frameworks, fiscal institutions demographics and macroeconomic trends. If a flagship touches on issues outside its primary area of responsibility, it is expected to follow the lead and—particularly on policy advice—the language provided by the lead flagship for that issue.

Table 2. Risks Identified in IMF Multilateral Surveillance, September–October 2013

	G-RAM	***WEO***	***GFSR***	***Fiscal Monitor***	**Global Policy Agenda**	**G20 Leaders Summit**
	September	**October**	**October**	**October**	**October**	**September**
General Assessment	…	Risks to *WEO* projections remain to the downside… an important concern is prolonged sluggish growth (p. 14).	Financial stability risks are in transition: macroeconomic risks remain unchanged but market, liquidity and emerging market risks have risen as markets price in earlier U.S. tightening (pp. 1–3).	Fiscal sustainability risks remain high in advanced economies, and are rising in emerging market economies (p. 11).	Downside risks to the outlook persist. Asynchronous shifts in policy stances raise important challenges and risks (p. 5).	Downside risks remain and some have become more prominent; concerns about prolonged period of sluggish global growth remain elevated (p. 4).
1. Protracted economic and financial volatility especially for EMs, triggered by prospective UMP exit	High	Risks related to unconventional monetary policy…while U.S. tapering is expected to be orderly, a less benign scenario for EMs is a distinct risk (p. 16).	Monetary policy normalization in the U.S. raises new financial stability concerns in EMs, especially given deteriorating macro and corporate sector fundamentals (pp. 15, 19).	Interest rate risks have increased, especially in EMs (p. 14).	EMEs and some LICs could experience further market volatility and pressure (pp. 5, 6).	Fed tapering may trigger overshooting and turbulence in emerging markets (p. 4).
2. Financial stress in the euro area remerges	Medium	Adjustment fatigue and general policy backtracking in a financially fragmented euro area (p. 14).	Financial fragmentation and corporate debt overhang allow adverse feedback loop between banks, corporates and sovereigns to continue in stressed economies (p. 31).	Downside risks to growth remain elevated in the euro area (p. 14).	Recovery could be held back by financial fragmentation, debt overhangs and impaired balance sheets in the euro area (p. 5).	Financial market stress could still reemerge (p. 4).
3. Global oil shock triggered by geopolitical events	Low	Geopolitical risks: larger, longer lasting production outages and price spikes would have bigger effects on growth (p. 16).	…	…	Geopolitical risks remain elevated (p. 5).	…
4. Fiscal policy shock in the United States	Low	The U.S. budget sequester, federal government shutdown and debt ceiling (p. 16).	…	…	Recovery could be held back by more front-loaded fiscal consolidation in the U.S. (p. 5).	…
5. Lower than anticipated emerging market growth potential	Medium	Less potential output in key emerging markets plus capital outflows (p. 16).	…	In some emerging markets, the slow pace of structural reform is dragging down potential output growth (p. 14).	Structured bottlenecks are becoming more binding the many countries (p. 5).	…

	G-RAM	*WEO*	*GFSR*	*Fiscal Monitor*	Global Policy Agenda	G20 Leaders Summit
	September	**October**	**October**	**October**	**October**	**September**
6. Bond market stress in Japan	Medium	Fiscal trouble in Japan (p. 16).	If policy follow through on Abenomics is inadequate, new risks to domestic and global stability could arise (p. 27).	…	Abenomics risks missing the mark if it remains based on just the monetary arrow (p. 5).	Insufficient fiscal consolidation and structural reforms could trigger serious risks (p. 4).
7. Protracted period of slower European growth	High	Very low growth or stagnation in the euro area (p. 16).	…	See 2.	…	…
8. Sharp slowdown in growth in China	Medium	See 13; specifically included in downside scenario.	Rapid credit growth in the shadow banking system in China remains a key vulnerability (p. 21).	…	…	…
9. Risks to financial stability from incomplete regulatory reforms	Medium	…	"…avoid undue pressures on banks from uncoordinated national regulatory initiatives and uncertainty" (p. 42).	…	…	…
10. Distortions from unconventional monetary policy	Low	…	Managing a smooth transition could be challenging, with risks of systemic financial strains in the US and across the globe (pp. 4–6).	…	…	…
11. Bond market stress in the United States	Low	Fiscal trouble in the United States (p. 16).	…	…	…	…
12. Sustained decline in commodity prices	Low	Geopolitical risks: leading to larger, longer lasting oil price spike (p. 16).	…	…	Many LICs vulnerable to a slowdown in global growth and commodity prices (p. 5).	…
13. More disappointments in emerging markets	…	The risk of more disappointments could interact with unwinding risks (1 above) (p.16).	…	Contingent liabilities from the banking sector are rising in several emerging markets (p. 4).	…	Could interact with unwinding risks (p. 4).
14. Less slack than expected in advanced economies	…	Less slack than expected in advanced economies, or a sudden burst of inflation (p. 16).	…	…	…	…
15. Age-related spending	…	…	…	Remains a key source of medium term vulnerability (p. 11).		

B. The Early Warning Exercise

13. The EWE (Table 3) was set up in 2009 at the request of the G-20 as a semiannual exercise to assess systemic tail risks to the global economic and financial system, conducted jointly with the Financial Stability Board (FSB), with three main aims:[11]

- To identify systemic vulnerabilities sufficiently in advance that corrective policies can be implemented;
- To warn of imminent risks that suggest tail risks are about to materialize and suggest mitigating action;
- To prioritize policy recommendations and formulate contingency plans based on probability and impact.

The EWE is not intended to predict the timing of a crisis, but rather to warn about vulnerabilities that could predispose the system to crisis. Particular emphasis is put on analyzing linkages between different risks—"connecting the dots"—and understanding how shocks could spread across different markets, sectors, countries and regions, areas where surveillance inside and outside the Fund fell short before the crisis.

14. The main EWE outputs are confidential presentations by the IMF and the FSB to the IMFC, with the IMF taking the lead on macroeconomic and macro financial vulnerabilities, and the FSB focusing on vulnerabilities and regulatory challenges in the financial sector.[12] The IMF and FSB prepare separate but coordinated presentations for IMFC, with both institutions providing a confidential briefing to the IMF Executive Board about a week in advance of the meetings (purely oral, with no documents circulated). The IMFC presentation and discussion is highly confidential, with each IMFC chair restricted to two attendees (although overall, there are some 80 people in the room).[13] To promote an unscripted and free discussion, no documents are circulated in advance,[14] and there is no formal minute taking or report of the discussion, either publicly or to the Executive Board. After the meetings, the FSB circulates its presentation to FSB members; the IMF presentation is kept confidential.

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[11] See "IMF-FSB Early Warning Exercise: Early Warning Methodologies and Analytical Tools: Overview," Informal Technical Briefing for Executive Directors, September 1, 2009.

[12] See "The IMF-FSB Early Warning Exercise: Design and Methodological Toolkit," IMF, September 2010.

[13] Beyond the two representatives from each IMFC chair, the meeting is also attended by Fund Management; selected IMF Department Heads; FSB staff; IMFC observers; G-20 representatives; and some special guests.

[14] Except to designated lead speakers.

Table 3. IMF Early Warning and Vulnerability Exercises, March 2013

	Periodicity	Authors	Purpose	Methodology	Output	Communication/Follow-Up
EWE	Semi-annual, beginning Spring 2009[1]	Produced jointly by the IMF and FSB. The IMF input is prepared by an interdepartmental committee, reporting to the FDMD.	To assess low probability but high impact risks to global economy, and identify policies to mitigate them.	The IMF presentation at the EWE draws on a range of quantitative models, including those for the VEA/VEE, as well as qualitative input from consultations with country authorities, market participants and academics.	Confidential presentations by IMF Management and the Chairman of the SCAV in the FSB. The IMF Executive Board is briefed in advance in restricted session.	The EWE presentation is highly confidential, with no public report on the outcome. There is no direct follow up, although it is hoped that the IMFC discussion influences policy making.
VEA	Semi-annual, beginning Spring 2009	Interdepartmental Risk Warning Group coordinated by SPR.	Identify risks and vulnerabilities in advanced countries; assess the potential for systemic disturbances in financial markets (unless related to EMs).	Crisis/event risk models gauging risk of financial crisis; growth slowdown, sharp fiscal adjustment; and vulnerability to spillovers from topical shocks in G-RAM. Vulnerability analysis based on models of sectoral vulnerabilities (financial, fiscal, asset prices, macro, external, cross-border exposures). ADs determine final ratings.	Integrated vulnerabilities note to Management, including overall vulnerability assessment for each country, crisis risk models and exposure to G-RAM downside scenarios; indicators of political risk; and recommendations for enhanced monitoring and technical assistance provision.	Vulnerabilities note provided to Management and staff only; it includes follow-up recommendations.
VEE	Semi-annual, beginning 2001[2,3]	Interdepartmental Risk Warning Group coordinated by SPR.	Assess underlying vulnerabilities and crisis risks in emerging markets.	As VEA, except that the vulnerability analysis is derived from a model of external crisis, based on select indicators covering external, public, financial, corporate variables.		
VE-LIC	Semi-annual, beginning 2011	Staff team led by SPR, in coordination with RES, FAD and ADs.	• Identify underlying vulnerabilities to potential growth declines and assess LICs' resilience to topical G-RAM shocks to help guide policy responses.	• Underlying vulnerabilities assessed using a Growth Decline Vulnerability Index with 13 indicators covering overall economy and institutions, fiscal, and external sectors. Impact of topical G-RAM shocks assessed using econometric models of growth, fiscal and external sector variables. Financial sector vulnerabilities assessed using VEE methodology for frontier markets. ADs determine final ratings.	Annual Board paper on LIC vulnerabilities.	Board discussion and external outreach of LIC vulnerabilities paper.

[1] The first EWE was a dry run at the Spring 2009 IMFC.
[2] Near term crisis risks are reassessed quarterly.
[3] The VEE methodology was significantly reformed in 2007 (see SM/07/328) and further updated in 2011 and 2014.

15. In the IMF, the EWE is managed by a senior staff member appointed by Management, who chairs the interdepartmental Early Warning Group (EWG), which includes staff from relevant functional and area departments. The EWG begins by identifying a number of possible topics, drawing on both internal and external sources,[15] with a final selection made after consultation with the First Deputy Managing Director, who makes the IMF EWE presentation at IMFC. The draft EWE is presented to Management and to department heads, but is not subject to the standard Fund review process. In practice, partly to ensure that the presentation is as current as possible, key choices on content are often made quite late in the process. In the FSB, the work is managed by the Analytical Group on Vulnerabilities, chaired by a member of the FSB secretariat. As in the Fund, the process begins by identifying a list of vulnerabilities, drawing on a combination of internal work, members' financial stability reports, and market intelligence. Internally, an outline of the presentation is discussed in the FSB Plenary Committee—in which the Fund is represented—and the final presentation with the Chairman of the Standing Committee on Vulnerabilities (presently Governor Carstens of Mexico), who delivers it at IMFC.

16. A review of recent IMF and FSB presentations suggest that the two institutions take somewhat different approaches to the exercise. While the nature of the IMF presentations has varied over time, they have recently focussed on risks—or combinations of risks—considered close to the tail (but not extreme tail risks which are considered unlikely to generate a useful discussion). FSB presentations have tended to focus more on risks to the baseline, particularly those related to the unfinished financial reform agenda, which are perceived to be the greatest operational priority. Partly as a result—and possibly also reflecting the differences in internal processes described above—the two presentations, while consistent, cannot be described as integrated. Indeed, over time the collaboration between the IMF and FSB seems to have become less intense, as exemplified by the dropping of the mutually agreed Early Warning List in 2012.[16]

17. A key objective of the EWE is to promote a stimulating and productive discussion at IMFC. In this connection, almost all country authorities and Executive Directors stressed that their Ministers and Governors were very keen to attend (although some saw the exercise as being of greater interest to advanced and emerging market countries than to LICs). Most saw the value of the exercise as being less in the early warnings themselves, and more the opportunity for their authorities to discuss these issues with their colleagues, and hear other views. It was also observed, however, that—even in this restricted forum—senior

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[15] These include market contacts and missions to large financial centers; and a conference call with leading academics, hosted by the Economic Counselor.

[16] The Early Warning List comprised a list of key risks, mutually agreed between the IMF and FSB, which was circulated in advance of the EWE presentation to the Executive Board. It was dropped in 2012, in part because it was highly resource intensive, and in practice not always closely linked to the final presentations.

policymakers were not always comfortable discussing risks, and that on occasion participants could be quite defensive.

18. One striking conclusion from external interviews was that many policymakers felt quite poorly informed on the exercise, receiving only limited feedback from their Ministers and Governors (even when their principal actually attended the meeting).[17] This problem was even more significant for members of multicountry constituencies, as those who attend do not in practice always debrief their colleagues—in part reflecting logistical difficulties at a very busy time.[18] Similarly, while functional and area department heads do attend the EWE meetings, many senior Fund staff are also unaware of the content of the presentation or key points made at the discussion.

19. In general, IMF staff tend to view each EWE as a once off exercise. The aim is to provide a forum for discussion and influence thinking, rather than reach agreement, and there is no formal summing up at the end. It is hoped that there will be an indirect effect on policymaking, but there is little attempt at follow up either inside or outside the Fund. In interviews very few country officials could pinpoint areas where the EWE presentation or discussions had influenced policies directly, or led to follow up work in the Ministry of Finance or Central Bank (of course, this may partly reflect the communication problems described above).[19] IMF staff felt, however, that the exercise did affect participants' thinking, and that some policymakers' views on specific risks had noticeably evolved following an EWE meeting.

C. The Vulnerability Exercises

20. The Advanced Economy Vulnerability Exercise (VEA) and Emerging Market Vulnerability Exercise (VEE) are semi-annual Fund exercises, coordinated by the Risk Working Group, and designed to generate a quantitative assessment of overall and sectoral vulnerabilities in individual advanced and emerging countries. The Vulnerability Exercise for Low-Income Countries (VE-LIC), introduced in 2011, is also a semi-annual exercise, which

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[17] This was the case notwithstanding the pre-IMFC briefing to the Executive Board, which should provide an overall picture of the main messages (though not, of course, of the eventual EWE discussion). In this connection, many Executive Directors felt that that the EWE briefing was difficult to absorb without the presentation—and also that the content could change later on—which made it difficult to brief their principals. However, there may also be broader communications problems: for example, senior officials in one major country were unaware that a pre-IMFC briefing on the EWE took place at all.

[18] IMF staff noted that the timing of the EWE meeting—generally in the afternoon of the first day of the meetings, after which there was little time to brief others—might also be a constraint to dissemination.

[19] In one case, a central bank governor asked his staff to follow up on the implications of a risk discussed at the EWE for the country in question. In another case, an idea from the EWE had been included in a speech given by the Finance Minister.

estimates countries' vulnerabilities to a potential growth decline and also simulates the impact of G-RAM shock scenarios.

21. While the methodology has changed over time, each exercise draws on a variety of model-based and quantitative indicators, to produce sectoral and overall vulnerability ratings for each country. These model-based ratings are then compared with area department desk ratings, and after discussion of relevant differences, both are presented in the final note with the area department rating constituting the final rating.[20] These vulnerability ratings are accompanied by assessments of crisis and event risk, based on a combination of crisis models (for advanced and emerging market countries), scenario based analysis of the impact of relevant global risks from the G-RAM, and desk judgement (see Table 3 for a broad overview, and Boxes 1-3 for more details). The results are then presented to and discussed with Management, but are not provided to the Executive Board or the public (although in the case of the VE-LIC, which is considered less market sensitive, there is an annual Board Paper discussing vulnerabilities by region/country groupings, which is later published).[21]

22. From early 2013, a number of changes were made to increase the operational effectiveness of the Vulnerability Exercises. The results of the three exercises were integrated into a single report to Management, with the timing adjusted to facilitate integration in other exercises, and area department judgement was more systematically incorporated (in the past, this was not the case, especially in the VEA). The staff also began to draw specific operational implications, including identifying priority countries for surveillance, and assessing technical assistance priorities. Methodologically, efforts are being made to deepen the sophistication of the models used for emerging markets, including extending advanced country crisis models to emerging markets, and developing measures of corporate sector vulnerability.

23. A final innovation introduced in Spring 2013 was to set up an internal Tail Risks exercise, conducted by an interdepartmental group of A-level staff who are not involved in other risk work, aimed at encouraging out-of-the-box thinking and providing a double check on the staff's list of global risks. To date, the Tail Risk Group has produced a report twice yearly—in the run up to each the Spring and Annual Meetings—which is presented to the Risk Working Group, and then to Management. In future, the exercise is expected to be expanded with interim quarterly updates.

[20] In the Summer 2013 round, desk ratings were the same as model based ratings in two-third of the 145 countries covered by the three exercises; half of the other desk ratings were higher than the model-based ratings, and half lower.

[21] Although area departments can share individual ratings with the country concerned.

Box 1. The VEA Exercise

The VEA exercise covers 33 advanced countries. Quantitatively, the exercise generates two main outputs: ratings of overall and sectoral vulnerabilities (external, macroeconomic, financial sector, fiscal, asset prices, and cross-border exposures) based on a suite of models; and ratings of credit/event risk, based on a combination of crisis models and scenario analysis; and ratings of policy capacity. From mid-2013, the exercise has systematically incorporated area department judgment on individual countries, which is presented alongside the model based results, and constitutes the final rating in both cases.[1]

The sectoral vulnerability ratings are derived from a set of specific models managed by staff in the relevant functional departments. The results from each model are expressed in terms of flags, with a red flag indicating high risk, orange flag medium risk, and green flag low risk, which are then aggregated to generate sectoral vulnerability ratings. For example:

- External vulnerabilities are determined by the average flag from models of external imbalances, exchange rate overvaluation, and balance sheet exposures;
- Asset price misalignments are determined by the worst flag generated from a set of real estate pricing models/indicators, and from another set of equity pricing models.
- Financial sector vulnerability is assessed as the weighted average of flags from the empirical financial crisis model; a model assessing the degree of interbank stress; and a model assessing vulnerability of large complex financial institutions.

These sectoral ratings are then aggregated to get an overall country vulnerability rating, with a country rated medium vulnerability if the number of sectoral flags is 0 to 1 standard deviations above the mean, and high vulnerability if the number of flags is one or more standard deviations above the mean. The risk weights used are judgmental, rather than derived from a crisis model as in the VEE (Box 2).[2] Moreover, the rules determining flag allocation imply that the overall model-based rating is a relative rather than an absolute concept, and needs to be interpreted in that light. The model based results are then reviewed by desks, who—after discussion of relevant differences—then determine the final rating.

The measures of underlying vulnerabilities are accompanied by various measures of crisis/event risk drawing on empirical models of fiscal, financial and growth crises; model-based assessments of potential spillovers from adverse shocks derived from the list of global risks in the G-RAM; and desk judgment, which once again constitutes the final rating. Most recently, the exercise has also included a measure of the capacity to implement policy responses to vulnerabilities and risks, based on risk scores developed by the International Country Risk Guide (ICRG) and, where relevant, IMF-supported program performance.

[1] Previously, the VEA rating was entirely based on the output of the various models.

[2] The staff note, however, that the overall results are broadly robust to different weightings of the sectoral results.

24. The results of the Vulnerability Exercises are directly used in the EWE, in the review process, and in some operational work (for example, assessing eligibility for the IMF's Flexible Credit Line facility). Recent TSRs have raised concerns that the results have not been fully integrated in other surveillance work, although the 2012 TSR Progress Report suggests some recent improvement (Table 1). While it is beyond the scope of this paper to assess this issue in detail, recent efforts to increase the involvement of area departments in the ratings, as well as the identification of country priorities for surveillance, which has led to greater internal discussion and debate of borderline cases, are positive steps.

Box 2. The VEE Exercise

The VEE presently covers 49 emerging market countries with significant links to international financial markets. Until very recently, the key outputs were an underlying vulnerabilities rating, which is primarily based on an analytical model and desk judgment; and a crisis risk rating, based on desk judgment, assessing the likelihood of a crisis in the next 12 months. This is accompanied by measures of crisis/event risk, including scenario analysis of the impact of the same set of adverse shocks used in the VEA, and—most recently—model based assessments of the risk of fiscal, financial and growth crises based on the models developed for the VEA.

The rating of underlying vulnerabilities is based on an empirical model of the risks of a balance of payments crisis. The model is used to derive "vulnerability thresholds" for 28 macroeconomic and financial variables—such as the current account balance, public debt, and capital adequacy ratio—which are expected to have played roles in capital account crises in the past.[1] For each country, an indicator is derived for each of these variables, with a value of 1 if the variable exceeds the threshold, and zero otherwise. (For example, the current account indicator would be 1 if a country's current account deficit is larger than the 2.5 percent of GDP threshold deficit derived from the model, and zero otherwise). The indicators are aggregated[2] to produce four sectoral vulnerability indices—external, public sector, financial and real—and then again to generate an overall model-based vulnerability rating. This is reviewed by country desks, who then determine the final rating.

The VEE approach to assessing vulnerabilities is much simpler than that of the VEA, and because the underlying indicators and weights used are derived from a model, it produces an absolute rather than a relative rating as in the VEA. By the same token, however, the underlying analysis is less rich, limiting its ability to capture real world complexities, and entirely focused on capital account crises. While this partly reflects data availability, it also suggests that there is scope to deepen the analysis further, perhaps drawing on the models developed for the VEA (IMF staff are currently working of including measures of corporate sector vulnerability). Like the VEA, the VEE also includes measures of policy capacity, drawing on relevant socioeconomic indicators and risk scores developed by the International Country Risk Guide (ICRG), and, where relevant, IMF-supported program performance.

[1] For each variable, the thresholds are chosen to minimize the combined percentages of missed crises and false alarms.
[2] The aggregation weights depend on the individual indicator's ability to discriminate between crisis and non-crisis cases (technically, they are calculated as 100—the combined percentage of missed crises and false alarms, and normalized to sum to 1).

D. Spillover Reports and the Pilot External Report

25. Spillover Reports were introduced in 2011 with the aim of enhancing the IMF's understanding of interconnections in the global economy, and particularly outward spillovers from the five most systemic economies (the S5)[22] an area which had been neglected before the crisis. The Pilot External Sector Report (ESR), which followed two years later, aims to provide a multilaterally consistent analysis of the external positions of major world economies, including exchange rate misalignments. While both these exercises are intended to support multilateral and bilateral surveillance work in general, they provide important inputs into the Fund's analysis of risks and vulnerabilities.

[22] The S5 comprise China, the euro area, Japan, the United Kingdom, and the United States.

Box 3. The VE-LIC Exercise

The VE-LIC covers 74 low-income countries. The key outputs are a growth decline vulnerability index (GDVI), measuring vulnerability to an externally-induced growth recession, and scenario analysis of the most relevant systemic risks, aiming to assess the adequacy of macroeconomic buffers and potential financing needs.

The GDVI is based on an empirical model of episodes in which LIC were hit by external shocks, and experienced sharp slowdowns in growth, and is constructed in a very similar fashion to the VEE crisis rating (Box 2). A variety of vulnerability indicators are identified, based on the experience in previous growth slowdowns, and threshold values for these indicators are derived from the model. These are then aggregated to generate sectoral vulnerability ratings—covering the public sector, external sector and the overall economy—and the GDVI itself. The VE-LIC also includes measures of crisis/event risk based on a scenario analysis of the the key global risks used in the VEA and VEE, as well as measures of policy capacity, again based on ICRG risk indicators and, where relevant, program performance.

While the methodology underlying the VE-LIC vulnerability rating is technically similar to that of the VEE, the meaning is very different: the VE-LIC assesses vulnerability to an externally-induced growth slowdown, while the VEE assesses vulnerability to a balance of payments crisis. In part, this choice reflects the nature of the risks seen to be most important when the VE-LIC was set up, as well as the fact that market-related risks are generally much less relevant for LICs.[1] Work on more crisis-related indicators—such as the risk of financial crises—is on the agenda, but presently not the highest priority given limited resources.

In contrast to the VEA and VEE, a summary of the results of the exercise—including vulnerabilities by region/country group, but not individual country ratings—is provided in an annual Low-Income Countries Global Risks and Vulnerabilities Report, which is discussed by the Executive Board and then published, accompanied by outreach presentations to donors, think tanks, CSOs, and country authorities.

[1] This is less true in some of the frontier economies, where methodologies from the VEE are increasingly also being applied.

26. Spillover Reports are intended to fill a gap between the domestic focus of country/bilateral surveillance and the broad sweep of the analysis of these issues in the *WEO* and the *GFSR*. Up to now, the exercise[23] has typically started with consultation with S5 and selected emerging market officials on potential spillovers from S5 country policies, and followed by a detailed analysis of the concerns that are raised. The results are presented in a consolidated spillover report, which is discussed at the Executive Board just after the S5 Article IV consultations, and then published. The content and focus of spillover reports are driven by the issues raised during the consultations with policymakers, and on occasion there has been significant duplication with other reports.[24] Most external interviewees, however, were supportive of the exercise, with one noting that it had helped jump start a culture of thinking about outward policy spillovers that had been absent before the crisis, both within the Fund and in countries themselves.

[23] The organizational modalities have changed every year. In 2011, spillover reports were produced for each of the S5, conducted by five SPR-led interdepartmental teams, as well as a consolidated report. In 2012, a consolidated report was produced, this time by an SPR-led interdepartmental task force; and in 2013 by an interdepartmental task force led by a staff member designated by Management.

[24] The 2012 report, for example, focussed on spillovers from potential risks, such as an intensification of the euro area crisis, or the U.S. fiscal cliff/medium-term sustainability, both of which were also analysed extensively in the *WEO* and *GFSR*.

27. The Pilot External Sector Report (ESR) broadens and deepens already existing exercises, more than breaking new ground. A central element is a multilaterally consistent approach to assessing exchange rate misalignments, based on RES' updating of the methodology used in the previous internal CGER exercise;[25] the timing of the report—which is issued in July—is designed to feed in to the S5 Article IV consultations that take place at that time. However, the ESR analysis goes well beyond exchange rates, to cover current accounts, reserve adequacy, capital flows, and external balance sheets. Within the ESR, the analysis of exchange rate and current account misalignments and reserves adequacy are important inputs into multilateral and bilateral risk assessments across the Fund. The transparency of the exercise is high: the underlying models (and annual estimates) are published, and have been presented at seminars in a number of countries. While the methodology and estimates remain very controversial for some authorities, IMF staff believed that this outreach had been helpful in improving understanding, and had also yielded valuable feedback.

28. Organizationally, through 2013 both the Spillover Reports and the ESR were managed by interdepartmental committees, with different chairs (and to some extent committee members) each year. For 2014, while the interdepartmental approach will be maintained, both exercises are to be led by, and anchored in, RES. It is hoped that this will make them more "year-round," and embed them more deeply into the regular structures of the Fund. More generally, IMF staff stressed the importance of both reports as a disciplining device to ensure consistency on interconnecting factors in the world economy and external imbalances, and as timely inputs into Article IV consultations with the largest systemic economies, which take place just after the two reports are finalized.

29. During 2010–13, a series of more general papers on interconnectedness were also produced,[26] which sought to describe and analyze trade and financial networks across countries based on direction of trade and BIS banking data. To deepen this analysis, the staff is also collaborating with a group of central banks, which—as noted above—have access to much more granular banking and market data, on a variety of projects related to networks of markets and financial institutions (one of which, developing a global flow of funds analysis, is in progress). In tandem with earlier work, it is hoped that this will lead to a better understanding of spillover channels, and thereby of vulnerabilities as well.

E. Bilateral Surveillance

30. Strengthening risk assessment in Article IV consultations—an area of weakness before the crisis—has been an operational priority for surveillance since 2008 (Table 1).

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[25] See "The External Balance Assessment (EBA) Methodology," Steven Phillips and others (IMF, 2013).

[26] Including "Understanding Financial Interconnectedness," IMF, October 2010; "Changing Patterns of Global Trade," IMF, June 2011; and "Trade Interconnectedness—The World with Global Value Chains," IMF, August 2013.

According to the 2012 Surveillance Guidance note, the Article IV dialogue with country authorities should include an "explicit and thorough" discussion of baseline and tail risks, their potential impact, and policy responses (both insurance and contingency planning), leveraging the risk analysis in the EWE/VEs, as well as in Fund multilateral and regional surveillance more generally.

31. To help achieve this, two new tools have been introduced:

- First, since 2011 country teams are required to produce a risk assessment matrix (RAM), listing the nature and source of the main risks facing the country; the staff's assessment of the likelihood they will occur; and the expected impact if they do (Box 4). This is expected to form the basis for discussion with the authorities, and the RAM—or its substance—must be included in the Article IV report.

- Second, Article IV staff reports must now include a public debt sustainability analysis (DSA)—a pro forma exercise for many advanced countries before the crisis—based on a revised and modernized framework introduced in mid-2011,[27] with the depth of analysis tailored to the magnitude of debt sustainability concerns (Box 5).

Box 4. Risk Assessment Matrices[1]

Risk assessment matrices (RAMs) are structured frameworks designed for analyzing risks and their possible impact, which have become standard features of Article IV consultation reports and Financial Sector Stability Assessments. In Article IV consultations, RAMs are expected to:

- Identify the nature and source of the main macroeconomic or financial risks—global, regional or country-specific—that could materially alter the baseline path discussed in the staff report;
- Make a subjective assessment of the relative likelihood of each risk (low, medium, or high);
- Assess the economic impact if the risk transpired (low, medium, or high).

Staff teams are required to produce a formal RAM for the interdepartmental policy consultation meeting before the Article IV mission, and are encouraged—but not required—to include it in the staff report. The design of the RAM is flexible, but to ensure consistency, global risks in RAMs are expected to be drawn from a global risk assessment matrix (G-RAM)—see paragraph 31 of the main text—which is updated quarterly or as needed by the Risk Working Group.

During the last quarter of 2013, every Article IV consultation report did include a RAM covering the three points bulleted above, and about three-quarters of them also included policy options to deal with the identified risks. In about two-third of cases, the most important risks identified were also discussed in the policy section and staff appraisal (Table 4).

[1] For more details, see the Guidance Note for Surveillance Under Article IV Consultations, IMF (2012).

[27] See IMF (2011b) and IMF (2013a).

Box 5. Debt Sustainability Analysis

A debt sustainability analysis (DSA) begins with a baseline trajectory for public debt based on the assumptions underlying the macroeconomic framework, and then analyses how changes to these assumptions, or the materialization of various risks, affects the public debt trajectory. Before the crisis, the DSA in market access countries was often a routine—almost cursory—exercise, with "mechanical implementation of the DSA template, little discussion of DSA results, and limited linkages between the DSA and discussion of macroeconomic and financial policies."[1]

While shortcomings in the debt sustainability framework were not the only reason for these failings, it was nonetheless evident that many elements could be improved. These included:

- *Greater scrutiny of baseline assumptions*, especially when the required fiscal adjustment is high by historical standards;
- *A more stringent analysis when public debt exceeds a reference level of 60 percent of GDP*, or if there are other vulnerabilities (e.g., short-term debt structure);
- *A fuller analysis of risks,* moving beyond standardized sensitivity analyses, drawing on vulnerabilities identified in other exercises (e.g., the VEs, CGER, and FSAPs); taking into account contingent liabilities; and focusing more on tail risks/alternative scenarios;
- *Integrating the assessment of debt structure and liquidity issues,* which were previously analyzed outside the DSA framework;
- *Ensuring a broad coverage of fiscal balance and public debt*, including SOEs, public-private partnerships, and pension and health care programs.

The Executive Board approved the new approach in August 2012, and specific operational guidance was issued in May 2013. Given tight resource constraints, the new DSA is being implemented in a risk-based fashion, with the depth of analysis beyond a minimum level tailored to the magnitude of concerns about sustainability, or the Fund's operational requirements (e.g., with respect to exceptional access).

[1] See "Modernizing the Framework for Fiscal Policy and Public Debt Sustainability Analysis," IMF (2011).

32. To support this, the RWG from mid-2012 has produced a quarterly Global Risk Assessment Matrix (G-RAM), consisting of a consolidated list of key global risks; a judgmental assessment of their likelihood; and the expected impact, including model simulations of selected risks, with country specific results made available to desks. The G-RAM, which is only circulated to Management and staff, is intended to be the prime source of the global risks discussed in Article IV RAMs, to ensure an up-to-date and consistent approach across all Fund products. Although the G-RAM is not published, the risks in it can be inferred from the RAMs in individual Article IV papers. In practice, they have recently been very similar, but not identical, to those in the *WEO* (Table 2).

33. While most external interviewees believed that the quality of risk assessment in bilateral surveillance had improved significantly since the crisis, many felt that there was still a way to go (a few thought a considerable way). In this connection, specific criticisms included a perception that Article IV consultations were still too focused on the baseline; limited use of alternative scenarios; and inconsistencies in RAM format, and the extent to which they are integrated with the accompanying text. While this paper does not seek to evaluate bilateral surveillance in detail, a survey of Article IV consultation reports in the last quarter of 2013 (Table 4) found that while all staff reports included RAMs, a significant

minority of key risks identified[28] were not discussed in the policy section or the staff appraisal, suggesting room for a more risk oriented approach in a number of cases.

Table 4. Coverage of RAMs and Alternative Scenarios in Article IV Consultations, During the Fourth Quarter of 2013[1]

	Number of Countries	Alternative Scenarios (In percent)	RAMs		Number of risks		Key Risks/Policy Response Discussed in[1]:	
			Included	Policy Options	External	Internal	Policy Section	Staff Appraisal
			(In percent)				(In percent)	
Advanced	5	0	100	60	3.2	1.6	67	70
Emerging	12	17	100	75	4.0	2.1	78	83
Low income	15	47	100	80	3.3	2.1	71	54
Total	32	28	100	75	3.6	2.0	72	67
Memo item								
G-20	7	29	100	86	4.1	2.3	83	83

[1]A key risk is defined as a risk which the staff assesses to have high probability and at least medium impact (or vice versa).

34. IMF staff in area departments, while acknowledging room for improvement, generally believed that bilateral surveillance was becoming more focussed on risks, although this was not necessarily easy to tell from staff reports which were subject to word counts and requirements to cover a range of different topics. They noted a number of specific initiatives to strengthen bilateral surveillance in individual departments, including clustering of relevant Article IV consultations; in some countries periodic risk seminars with external experts; and the establishment of analytical groups to look at cross-country issues in a number of area departments. It was also observed that it took two to tango, and that some country authorities were in practice unwilling to engage in a dialogue on particularly sensitive risks.

IV. THE EXPERIENCE TO DATE

35. The previous section described how each individual exercise works: this section looks at the system as a whole, including the extent to which the gaps in the pre-crisis framework have been filled; how effectively what is now a quite complex and multifaceted system is coordinated and integrated; and the extent to which the reforms have been accompanied by cultural changes, such as a willingness of staff to express dissenting views. It concludes by reviewing a recent relevant episode, the Fund's assessment of risks and vulnerabilities in emerging markets during 2011–13, focussing on how well risks related to the prospective exit of advanced countries from unconventional monetary policy (UMP) were identified.

[28] Key risks are defined to be those the staff identifies as having a high probability risk with at least medium impact (or vice versa).

A. The System as a Whole

36. In principle, an effective risk assessment framework should have four key elements. It should identify the underlying risks and vulnerabilities, and the linkages between them; it should seek to quantify the potential impact; it should communicate the results quickly and effectively, along with relevant policy options, to maximize traction; and finally, it should include appropriate follow up, particularly when risks remain unaddressed. How does the Fund's current approach measure up against these criteria?

(i) Identification

37. Since 2009, as described above, many major gaps in the Fund's framework for identifying risks and vulnerabilities have been filled. The Vulnerability Exercises now cover all types of countries, not just emerging markets; the EWE and Tail Risk Group look explicitly at tail risks, to complement the more baseline-oriented perspective of the multilateral flagships; the Spillover Reports have led to increased focus on interlinkages; RAMs and G-RAMs provide a consistent approach to ensuring that global risks are consistently incorporated in bilateral surveillance; and the *Fiscal Monitor* and revised DSA framework provide for a more thorough assessment of fiscal vulnerabilities, particularly in advanced countries.

38. Overall, this represents substantial progress in a relatively short time. Nonetheless, as emphasised by many interviewees—including IMF staff—the Fund's approach to risk assessment remains a work in progress, in good part reflecting the state of the art. For example, the Fund's analysis of risks and vulnerabilities is more developed for flows than for stocks, and for national entities than for globally important institutions such as SIFIs (the latter also reflecting the Fund's limited access to relevant data). In this connection, some external interviewees underscored the need for more work on the implications of cross-border capital flows and potential balance sheet mismatches, and for country-level stress tests, which should include the corporate sector. Overall, developing a new framework for assessing risks and vulnerabilities is a marathon rather than a sprint, and will require sustained effort over a long period of time.

39. While each of the new products has filled a gap in the structure, the increase in the number of exercises—and lead departments—has resulted in an increasingly complex and multifaceted system. In practice, apart from informal contacts, coordination takes place primarily through consultations with Management, interdepartmental committees, and departmental review. This process has led to significantly greater internal debate and cooperation, as well as improved—although, as discussed in Section IV.B, not perfect—consistency across the main products. It is less clear, however, that this process cannot generate a truly *integrated* analysis of risks. No one person below Management level overlooks the Fund's risk assessment exercises as a whole; those exercises which do explicitly seek to join the dots—such as the EWE and Spillover Reports—are periodic rather

than ongoing, and cover only a subset of risks. To strengthen integration—which is likely to become more important in quieter times when the underlying risks and sectoral interlinkages may be less clearcut than they have been recently---and provide a greater counterbalance to departmentally based exercises, the Fund could set up a small unit led by a very senior staff member reporting to the First Deputy Managing Director, responsible for ensuring the Fund has a consistent and integrated approach to, and view of, global risks (see also IEO, 2011).[29] This senior staff member could also chair the Risk Working Group and manage the EWE (thus providing it a permanent home and infrastructure).

40. A similar issue arises in the EWE, where the IMF and FSB presentations are consistent, but not integrated. While integration may be complicated by different governance structures and approaches to the exercise, the current situation—division of labor without deep integration—raises the risk that the EWE may miss relevant interactions between regulatory and macrofinancial issues in the future. Some IMF staff members believed that this was a problem more broadly for Fund risk assessment, and that the impact of regulatory changes on macrofinancial conditions—through, for example, their impact on market liquidity or on the availability of funding for certain sectors—deserved greater attention.

41. Finally, the Fund's ability to identify risks is clearly importantly influenced by the available data. While the G-20 Data Gaps Initiative will fill important holes, others remain, either because the data itself is not collected[30]or because the IMF does not have access to it (for instance, access to balance sheet data on SIFIs collected under the auspices of the FSB is highly restricted for legal and confidentiality reasons). Moreover, as financial markets continue to develop, and the analysis of risks and vulnerabilities becomes more sophisticated, new gaps can be expected to emerge in the future. Since the absence of data is itself a important risk, the Fund—in conjunction with other relevant international institutions—should play a proactive role, for instance through a periodic review of the state of global statistics and key data gaps most relevant for financial stability for discussion at the Executive Board and IMFC.

(ii) Quantification

42. Since 2008, efforts to quantify risks have expanded dramatically, particularly in multilateral surveillance, where the use of quantitative scenarios has become commonplace, centered on global economic models developed in RES and SPR. Every *WEO* now includes a set of alternative scenarios, on occasion coordinated with the *GFSR*; and the G-RAM exercise includes simulations of the impact of selected global risks on individual countries, for use in bilateral surveillance. There has also been a veritable explosion of analytical work

[29] Such a unit would have a different purpose from the Risk Management Unit announced by IMF Management on April 1, 2014, which is intended to assess risks to the Fund's ability to carry out its mission.

[30] For example, data on foreign exchange mismatches at both an aggregate and sectoral level.

in connection with the Vulnerabilities Exercises (the methodology note for the Winter 2014 advanced country vulnerability exercise runs to some 50 pages). There has been less progress in bilateral surveillance, where alternative scenarios remain the exception rather than the rule (Table 4).

43. While this increase in analytical work is welcome, it is important that the results are kept in perspective, and—as stressed in IEO (2011)—the strengths and weaknesses of the underlying models are clearly explained. Internally, there have been significant differences among departments concerning the merits and appropriate use of models used widely in the Fund's risk analysis work; and externally, a number of interviewees observed that the traction of staff's policy recommendations would be higher if they had a fuller understanding of the models on which they were based. The IMF should consider ways of strengthening transparency of its analytical work, building on the example set with the EBA (paragraph 27), with the aim of ensuring that descriptions of the most important models used in surveillance, including their strengths and weaknesses, are easily available to policymakers and the public; it should also encourage periodic review by external experts.[31, 32]

(iii) Communication and follow up

44. The Fund's framework for communicating risks and vulnerabilities has, as illustrated in Figure 1, two main layers. Externally, the multilateral flagships, G-20 notes, Article IV consultations and *REOs* are the workhorse publications used to communicate risks to the widest possible audience; WEMD presentations, country matters sessions and the EWE are the vehicles for confidential discussions of risks with the Executive Board and senior policymakers at IMFC. While this framework appears fairly comprehensive, the sheer volume of paper produced is daunting, with most policymakers—and Fund staff themselves—simply unable to absorb it. While some consolidation of the various exercises would help (Section IV.A.iv), many interlocutors expressed the desire to have a short and integrated summary of the Fund's analysis (the Global Policy Agenda, which focuses more on policy priorities than on the underlying analysis, was not seen to be presently fulfilling this role).

45. Turning to the specific exercises, the most important concerns relate to the weaknesses in communication of the EWE (paragraph 18), with many senior policymakers poorly informed of the key takeaways, reducing the relevance—and perhaps the traction—of the exercise. While in principle this is an issue for IMFC members and their constituencies to address, in practice it appears very difficult to ensure that Ministers and Central Bank Governors fully debrief their colleagues and staff at a very busy time. One way to address

[31] A summary of the methodologies used in the EWE and the Vulnerabilities Exercises was published in 2010 (IMF, 2010a), but has not been updated.

[32] As one step in this direction, SPR recently organized a seminar on Fund modeling work with external experts.

this issue would be to relax attendance limits, although this would come at the cost of increasing the size of an already large meeting. Another—which could also help address issues related to follow up (paragraph 19)—would be for IMF Management to provide a summary of the key takeaways, perhaps through a post-meetings briefing of the Executive Board. This could also help improve communication of the EWE inside the Fund.

46. At the present time, very little of the Fund's assessment of tail risks is made public (Figure 1). While there may be cases where the release of the Fund's analysis could unsettle markets, in practice many of the issues covered in EWE presentations are simultaneously being discussed outside the Fund, and much of the analysis does not appear especially confidential. Dissemination of the main takeaways could contribute to the public debate without much risk of adversely affecting markets or having a chilling effect on the EWE discussion (see Section IV.B for an example of when greater openness might have been useful).[33] Among the other exercises, there is a strong case for keeping the Vulnerabilities Exercise internal, to ensure that it remains an entirely technical exercise. However, consideration could be given to publishing the Fund's list of global operational risks in the G-RAM (indeed, the substance is effectively already available, since the G-RAM can be reverse-engineered from the RAMs contained in Article IV consultations), perhaps through incorporating it into *WEOs* and WEO Updates.[34]

47. Finally, it will be important to ensure that more extreme tail risks—which are not presently a focus of the EWE—remain on policymakers' radar screens. One approach could be to hold periodic informal Executive Board discussions of more extreme tail risks, drawing on the work of the Tail Risk Group—this could also help set the agenda for follow up work, and prepare the ground for discussion with senior policymakers later on if justified.

48. As discussed in recent TSRs, in the past follow-up of the staff's work on risks and vulnerabilities has fallen short in a number of areas. Over the past few years, progress has been made in addressing these: in particular, the results of the Vulnerabilities Exercise are now being used to help define Fund-wide priorities for surveillance and technical assistance, and the RAM and G-RAM exercises help ensure that multilaterally identified risks are systematically and consistently covered in country work. One additional area where there appears scope for more follow-up is the EWE. As discussed above, while it is hoped that it will impact policies and policy thinking in member countries, it is hard to find many concrete examples. As a tail risk exercise, the EWE should not require follow up action every time, but there should certainly be occasions when it does. A more systematic approach for identifying and prompting follow up both within the Fund and outside—for example, as part

[33] This recommendation is also made in "Strengthening the Early Warning Exercise: Enhancing IMF and FSB collaboration," Bessma Momani and others, World Economics, July–September 2013.

[34] This would also avoid the oddity of occasional differences between the two.

of a post-IMFC briefing of the Executive Board as suggested above—could help ensure that such opportunities are not missed when they occur.

(iv) Culture and organization

49. While the effectiveness of any risk assessment system depends in part on the technical merits of the underlying exercises, it also depends critically on the culture in which they operate. In interviews, senior IMF staff generally believed that the cultural environment in the Fund had improved since the crisis, although most acknowledged that there was still some way to go. Management was generally seen to be more open to discussing risks, especially in Surveillance Committee; interdepartmental meetings/committees had helped break silos and provided fora for vigorous debate; and staff appeared more willing to stick their necks out.

50. Despite this progress, the 2013 Staff Survey suggests that A-level staff in the IMF—from whom the bulk of new ideas and analysis must come—still feel constrained in speaking their minds. As can be seen from Table 5, the percentage of favorable responses to questions relating to innovation and empowerment declines steeply with grade, from around 60 percent for B4-B5s to less than one-third for the A11-A15 group. Under 20 percent of A11-A15 staff responded favorably to the statement that the Fund had established a climate where employees can challenge the traditional way of doing things (one-third the percentage of B4-B5 staff),[35] or to the statement that at the Fund it was better to take a calculated risk and fail than not to take a risk at all. For A-level staff, these responses were all lower than in comparator organizations—some significantly so—and in the one case where a question was repeated from the 2010 survey, the results deteriorated slightly.

51. Senior IMF staff generally agreed that these results were disturbing, although several observed that they were somewhat at odds with their own personal experience (for example, A-level staff appeared to speak up freely at the Surveillance Committee); it was also noted that the Tail Risk Group, which consists entirely of A-level staff, was an important innovation. That said, potential causes suggested included a continued lack of delegation of high quality work to A-level staff; the limited promotion possibilities for A-level staff, which made staff more risk averse; and self-censorship by supervisors to preempt potential problems in the review process, which tended to stifle new ideas. While many of these likely reflect structural problems which are well beyond the scope of this paper, the wide range of responses across departments evident in Table 5 suggests that there is scope for short term improvement. One approach that might incentivize progress would be for HRD to produce a list of best practices from relatively successful departments, and set targets for improvement in annual Departmental Accountability Frameworks, monitoring outcomes through an annual mini staff survey.

[35] It is striking, however, that over 50 percent of A-level staff felt encouraged to come up with new and better ways of doing things. One explanation offered for this apparent inconsistency was that staff may feel that new work is encouraged, provided that it tends to support existing positions.

Table 5. Selected Responses from the 2013 IMF Staff Survey
(Favorable responses, in percent)

	IMF staff by grade					Departments	
	Overall	A11-A13	A14-A15	B1-B3	B4-B5	Functional[1] (range of responses in parentheses)	Area[2]
Present job provides authority to make decisions on how to do your job	40	29	36	57	72	40 (35–48)	38 (29–50)
Job provides chance to have ideas adapted and put into use	41	40	40	54	77	41 (38–44)	39 (32–49)
How do you rate the Fund on: Creating an environment of openness and trust	39	38	31	43	53	41 (35–44)	38 (33–44)
Employees at the Fund are reluctant to reveal problems or errors to managers above them	19	21	16	25	40	19 (14–23)	20 (15–24)
I feel encouraged to come up with new and better ways of doing things	61	56	52	69	83	63 (55–69)	56 (43–68)
The Fund has established a climate where employees can challenge the traditional ways of doing things	28	19	18	32	58	27 (23–32)	23 (17–28)
At the Fund, it's better to take a calculated risk and fail than not to take a risk at all	23	21	15	25	34	27 (23–30)	20 (17–25)
Average	36	32	30	44	60	37 (34–41)	33 (27–40)
Memo Item							
Overall, how would you rate the Fund as a place to work for compared with other organizations you may know about	78	77	72	86	87	79 (76–81)	76 (71–84)

[1] FAD, MCM, RES, SPR.
[2] AFR, APD, EUR, MCD, WHD.

52. The very large number of exercises that now comprise the Fund's risk management system also raises organizational issues. Beyond the difficulty of absorbing the messages discussed above, area department staff stressed that the coordination costs were large, and that providing data, reviewing and ensuring consistency in so many multilateral products had seriously impacted their ability to do country work. The large number of players and exercises may also diffuse accountability for identifying specific risks, particularly those related to large systemic countries. Many interviewees—internal and external—saw a case for further consolidation of the various exercises,[36]although opinions differed on how this should be done (options suggested included merging the Pilot External Report and/or the Spillover Reports into the *WEO,* and reducing the periodicity of the *Fiscal Monitor* to once a year). It was also observed that it would be important to ensure that any streamlining was done in a way which avoided any reversal of the progress that has already been made.

[36] To date, the periodicity of the Regional Economic Outlooks has been reduced; *GFSR* and *Fiscal Monitor* updates have been eliminated; the vulnerabilities reports have been consolidated; and there have been efforts to limit duplication through the Flagship Compact (paragraph 12).

B. A Case Study

53. As noted in the introduction, given the short and very specific period that the reforms to the Fund's framework for assessing risks and vulnerabilities have been in place, only tentative conclusions can be drawn from the track record. Nonetheless, the experience may yield some lessons: this section reviews the evolution of the Fund's views on emerging market risks during the period 2011–13, focusing on the extent to which it identified risks and vulnerabilities associated with the prospective tapering of OMP in advance of the volatility experienced in mid-2013.[37]

54. From Fall 2009, as the world economy began to recover from the Great Recession, the IMF's concerns in emerging markets increasingly shifted from the risks of adverse spillovers to overheating, as capital inflows to emerging markets picked up strongly. In Fall 2009, the *WEO* noted that some economies were already seeing large asset price increases in response to low interest rates and easy credit, and that these pressures could be exacerbated by strong capital inflows.[38] Subsequently, concerns about the impact of capital flows on emerging market macro and financial stability, and the risk of a potential reversal, were repeated—to varying degrees, with the intensity depending on the global situation—in most other *WEOs* and *GFSRs* through mid-2011. This was accompanied by a series of analytical papers on capital inflows and the appropriate policy response, culminating in 2012 with a formal statement of the Fund's position of these issues, which included active use of macro prudential instruments, and a greater openness than previously to the use of capital controls in appropriate circumstances.[39]

55. The nature of the risks from capital inflows, of course, depends importantly on the underlying forces that are driving them. The Fund recognized that a variety of factors contributed, and put a great deal of effort analyzing them. On net, the role of "pull factors"—developments in emerging markets themselves—was given somewhat greater emphasis. For example, the Spring 2010 *GFSR* (page 29) noted that "Pull factors, such as relative growth differentials, appreciating currencies, and rising asset prices are driving the resurgence.… However, push factors, such as low interest rates in major advanced countries…are also key...." In Spring 2011, the *GFSR* stated that while "many market participants and policymakers have attributed the recent strong portfolio inflows into emerging markets to low interest rates and high levels of liquidity created by central banks in large advanced economies…there is little evidence that cross-border flows surged owing to quantitative easing."

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[37] This episode also has the advantage of having taken place relatively late in the period under review. Other relevant episodes took place significantly earlier, and are primarily related to the euro area crisis, which will be examined in a future evaluation.

[38] World Economic Outlook, Fall 2009, page 41.

[39] "The Liberalization and Management of Capital Flows: An Institutional View," IMF, November 2012.

56. Overall, while the potential impact of expansionary monetary policy on capital flows was recognized, it was not seen as the dominant factor. Moreover, there was a strong view that the net impact of OMP on emerging markets was positive. For example, the Spring 2011 *WEO* observed that “available evidence suggests that as long as monetary policy successfully stabilizes output in advanced countries, spillovers to emerging and developing countries will not be detrimental…” (p.16). While the conclusion was not directly drawn, this also implied that the exit from expansionary monetary policies, if managed in a way which stabilizes output in advanced countries, would also be beneficial for emerging markets.

57. From late 2011 though end-2012, as the global outlook steadily deteriorated, the Fund’s concerns in emerging markets shifted from overheating to the risk of a hard landing, and the potential for this to expose financial sector and other vulnerabilities. With growing risks of spillovers from the euro area crisis, concerns about the impact of advanced country monetary policy on emerging markets were correspondingly less pressing; moreover, as emerging market growth persistently fell short of expectations, there was an increasing focus on the possibility that long term potential growth was lower than had earlier been thought (Table 6). The issue was, however, again discussed in the July 2012 Spillover Report, which noted that it was not possible to make any “easy generalization about advanced country monetary policy as the main driver of asset price pressures in emerging markets. There has undoubtedly been push from the former but also pull from the latter.”

Table 6. Emerging Market Risks Flagged in the *WEO* and *GFSR*, June 2011–October 2013

	WEO	*GFSR*
2011		
June	Overheating pressures intensified	Prolonged period of low interest rates may build financial imbalances for the future in some EMs
August	Overheating risks more differentiated, relating mainly to rapid credit growth and financial vulnerabilities	Rapid credit growth may lead to deteriorating asset quality; sudden stop… could strain capitalization in EM banks
2012		
January	Risk of hard lending, in context of uncertain potential output	Risks of spillovers from euro area debt crisis
March	Reevaluation of sustainable growth in EMs	Sharp pullback in credit could expose existing vulnerabilities
July	Lower potential growth; impact of credit growth on financial stability	Given EM vulnerabilities a large downside shock could put financial stability to a serious test
September	Output growth in EMs may disappoint	Further escalation of euro area stress poses risks, especially in central and eastern Europe
2013		
April	EM growth disappointments symptomatic of deeper structural problems. Fed may have to raise interest rates earlier than planned but in that event any commensurate increase in EM risk spreads likely to be limited and temporary and overall impact positive	Potential for capital flows to persist or accelerate partly driven by low interest rates and higher risk appetite in advanced countries would increase financial stability risks; EMs could prove vulnerable to … an eventual rise in global rates amid rising uncertainty
October	The current *WEO* projections assume the tightening of financial conditions since May in the U.S. and many EMs was largely a one-time event, and that the actual tapering will further tighten conditions only modestly. However, a less benign scenario is a distinct risk...	Emerging market risks have increased because of weaker growth prospects coupled with less accommodating external conditions and more worries about domestic and external vulnerabilities.

58. In early 2013, with the U.S. economy improving, the Early Warning Group began to focus on the potential for volatility in the event of a prospective U.S. exit.[40] Its work touched off an intense internal debate between those who believed that U.S. monetary tightening in response to higher U.S. demand growth was likely to have positive spillovers—as predicted by most general equilibrium models[41]—and those who saw a risk of a disorderly reaction in financial markets, accompanied by interest rate overshooting. In the event, the *WEO, GFSR*, EWE, and GPA presented the following broad messages at IMFC:

- The *WEO* (p. 14) noted that while the Fed might have to raise interest rates earlier than planned, prompting capital outflows from emerging market economies, in this event any commensurate increase in emerging market risks spreads was likely to be limited and temporary, and the overall impact would be positive;

- The *GFSR* (p. 32) observed that the potential for capital flows to persist or accelerate, partly driven by low interest rates and higher risk appetite in advanced countries, would increase financial stability risks; and that emerging markets could prove vulnerable to an eventual rise in global interest rates amid rising uncertainty.

- The GPA (p. 6) noted that concerns were rising about the spillovers from loose and unconventional monetary policy…many emerging market economies were concerned about the possible blow to output and the financial system if large inflows of capital reversed rapidly.

- The EWE noted that while a U.S. recovery was good for the global economy, countries should be prepared for volatility from a U.S. monetary policy exit. It considered the implications of a scenario of a sharper than expected rise in U.S. long term interest rates for emerging markets, and how that might interact with emerging market vulnerabilities, and made specific recommendations on policy measures to reduce risks.

Overall, there were distinctly different messages, with the *WEO* being the most benign, and the EWE most specific on potential risks. In this connection, some IMF staff noted that the *WEO* was not intended to focus on tail risks, but agreed that there were also underlying differences of view within the institution.

59. In the event, the May 22, 2013 Congressional testimony by then Fed Chairman Bernanke triggered unexpected volatility in financial markets, with emerging market domestic yields rising significantly more than standard models had predicted, following

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[40] This risk was also flagged by the Tail Risk Group in February 2013, although only as 1 of 19 potential tail risks.

[41] See, for example, the GIMF simulations in the April 2013 *WEO*.

which Fund Management commissioned a cross-departmental study of the global impact of UMP. [42] In the interim, the risks of side effects from UMP exit were included in the May 2013 G-RAM and raised further in the September G-RAM.[43] In September, the cross-departmental study was completed, concluding that while UMP had on net been beneficial for the global economy, easy global financial conditions had played a substantial role in encouraging capital inflows to non-UMP countries, and that the eventual exit from UMP could lead to volatility with "significant spillovers" to the rest of the world.

60. It is still too early to know how great the risk from advanced economy monetary tightening will be in practice, and consequently this section does not seek to evaluate the ultimate merits of the arguments on each side. However, a number of conclusions can be drawn from the experience so far:

- First, the Fund did identify the risks from tapering by April 2013, although as events turned out this proved rather late in the day. However, the messages across the various multilateral products were not fully consistent, with the clearest warning given in the EWE, where its impact was likely diluted by the communications problems described above. This reinforces the case for a more centralized approach to risk assessment and for a more activist approach to disseminating—and following up— the main takeaways from the EWE, both to policymakers and more broadly.

- Second, the vigorous internal debate on the issue is to be welcomed. However, the failure to present a clear message in April 2013, and the continuing differences that persisted thereafter, raises questions whether the existing framework is adequately integrating conflicting viewpoints, particularly across real and financial issues.

- Third, the Fund's views on the role on the effect of UMP on capital flows have evolved noticeably over the last several years—in itself hardly surprising, with the world economy in largely uncharted waters. However, it does reinforce the broader point that, particularly in situations with few historical precedents, economic analysis and models provide only imperfect guidance, and need to be appropriately integrated with anecdotal and other evidence as well.

V. Concluding Observations

61. Since the crisis, the Fund's framework for assessing risks and vulnerabilities has improved significantly. A variety of new exercises have been introduced to fill gaps existing before the crisis, and there is a strong consensus that the quality and quantity of the Fund's

[42] See IMF (2013b).

[43] The May 2013 G-RAM was also accompanied by a scenario illustrating the effects of accelerated monetary normalization in the United States.

analysis has greatly improved. In short, a lot has been accomplished in a relatively short time. However, as IMF staff well recognize, the framework is still a work in progress, and much remains to be done, for example in strengthening analysis of global and national balance sheets, and understanding systemic risks in the financial sector (paragraph 38). Thus, it will be critical to ensure that the current strong focus on risks and vulnerabilities is maintained going forward, perhaps even more so in quieter times when vulnerabilities may be less evident and the linkages between them harder to identify.

62. Since the crisis, the Fund's Risk Management framework has expanded dramatically. This approach has helped fill critical gaps, but has also resulted in a relatively complex and multifaceted system, with nine different exercises managed in five separate departments, coordinated largely by committee and by meetings with Management. The volume of analysis that results is very difficult to absorb, both for policymakers and for IMF staff themselves; the system also requires a very substantial expenditure of effort to ensure consistency, which—as the experience with tapering described in Section IV.B demonstrates—is not always achieved. As an immediate priority, it would be desirable to produce a short integrated summary of the Fund's views on the global outlook, risks and vulnerabilities, as background for each IMFC (paragraph 44); the Fund should also strengthen its efforts to consolidate and simplify the system (paragraph 52). In addition, given the rapid expansion of departmentally-based exercises, there is a case to strengthen centralized coordination, for example by establishing a small unit led by a very senior staff member reporting to the First Deputy Managing Director, responsible for ensuring the Fund has a consistent and integrated assessment of global risks (paragraph 39).

63. The EWE is among the most important innovations introduced after the crisis, and is generally highly praised by those who attend. That said, there is room to improve its effectiveness in a number of areas. Many senior policymakers are in practice unaware of the main takeaways from the EWE due to the restricted attendance and rather limited debriefing by the participants (paragraph 45); and it is difficult to find many concrete examples of follow up either inside or outside the Fund (paragraph 48). One approach to addressing both these issues would be for the First Deputy Managing Director to brief the Fund Executive Board on Fund Management's views of the main takeaways after each EWE, and necessary follow up by the IMF and by members themselves. In addition, the Fund, in collaboration with the FSB, should consider how best to improve integration of the two presentations (paragraph 40), to ensure that the interaction between regulatory and macro-financial issues is appropriately covered.

64. It will be important to ensure that more extreme tail risks—which are not presently a focus of the EWE—remain on policymakers' radar screens. To this end, one approach could be to hold a periodic informal Executive Board discussion on extreme tail risks, drawing on the work of the Tail Risk Group; this could also prepare the ground for discussion at a more senior level where appropriate. The Fund should also consider whether more of the results of its work on tail risks—which is now largely confidential—could be made public. While there

may be cases in which publication could be risky, in practice much of the EWE analysis—for example—is not that confidential, and it is possible that both transparency and policy traction could be improved by providing more information to the public more broadly, for instance in the context of a Management speech.

65. While bilateral surveillance is not a focus of this paper, it is concerning that many interviewees felt that Article IV consultations were often overly focused on the baseline (paragraphs 33–34). This underscores the need to continue to strengthen risk analysis in Article IV consultations, and ensure that it is a central part of the team's work (preferably through holding senior managers in area departments responsible for quality, rather than through issuing more guidelines). These efforts need to be matched by greater openness of country authorities themselves to discussing risks.

66. A crucial element of effective risk assessment is the quality and availability of relevant data. While the G-20 Data Gaps Initiative will fill important holes, others remain and new ones will arise in the future as financial markets continue to develop and the analysis of risks and vulnerabilities becomes more sophisticated (paragraph 41). Since the absence of data is itself a important risk, the Fund should take a proactive approach in identifying emerging statistical issues, for instance through a periodic assessment of the state of global statistics and data gaps most relevant from a global stability perspective for discussion at the Executive Board and IMFC.

67. As emphasized in IEO (2011), the culture—as much as formal exercises—is critical to effective risk assessment. While there is greater openness to debate at senior levels in the Fund, the 2013 Staff Survey suggests that A-level staff still feel highly constrained (paragraphs 49–50). Less than 20 percent of A11-A15 staff responded favorably to the statement that the Fund had established a climate where employees can challenge the traditional way of doing things or to the statement that at the Fund it was better to take a calculated risk and fail than not to take a risk at all. Many of the reasons suggested for this appear structural in nature, with solutions that are well beyond the scope of this paper. However, with the Staff Survey also showing wide variations across departments, one way to encourage immediate improvement would be to develop and circulate a list of best practices in the more successful departments, and set quantitative targets for improvement in the annual Departmental Accountability Frameworks, with outcomes monitored through an annual mini staff survey.

68. Finally, the approach and methodologies that the Fund uses to assess risks and vulnerabilities are, for many, relatively opaque. Drawing on the example of the External Balance Assessment, the Fund could periodically produce a summary description of its main exercises and methodologies—highlighting both strengths and weaknesses—for discussion at an Executive Board seminar and more broadly outside the Fund. This would not only help improve the transparency and credibility of the Fund's work, but would also provide opportunities for internal and external feedback on the system as it evolves in the future.

References

Financial Stability Board and IMF, 2009, "The Financial Crisis and Information Gaps: Report to the G-20 Finance Ministers and Central Bank Governors."

Financial Stability Board and IMF, 2012, "Progress Report on the G-20 Data Gaps Initiative: Status, Action Plans, and Timetables."

R. Barry Johnston and others, 2009, "Addressing Information Gaps," IMF Staff Position Note SPN/09/06 (Washington: International Monetary Fund).

Independent Evaluation Office, 2011, "IMF Performance in the Run-Up to the Financial and Economic Crisis: IMF Surveillance in 2004–07" (Washington: International Monetary Fund).

IMF, 2007, "Financial Soundness Indicators: Experience with the Coordinated Compilation Exercise and Next Steps" (Washington).

——————, 2008, "2008 Triennial Surveillance Review," SM/08/287 (Washington).

——————, 2010a, "The IMF-FSB Early Warning Exercise: Design and Methodological Toolkit" (Washington).

——————, 2010b, "Understanding Financial Interconnectedness" (Washington).

——————, 2011a, "Changing Patterns of Global Trade" (Washington).

——————, 2011b, "Modernizing the Framework for Fiscal Policy and Public Debt Sustainability Analysis" (Washington).

——————, 2011c, "2011 Triennial Surveillance Review," SM/11/233 (Washington).

——————, 2012a, Fiscal Monitor, October (Washington).

——————, 2012b, Global Financial Stability Report, October (Washington).

——————, 2012c, World Economic Outlook, October (Washington).

——————, 2012d, "Guidance Note for Surveillance Under Article IV Consultations" (Washington).

——————, 2012e, "One Year after the 2011 Triennial Surveillance Review—Progress Report," SM/12//267 (Washington).

——————, 2013a, "Staff Guidance Note for Public Debt Sustainability in Market Access Countries," May 19, 2013 (Washington).

——————, 2013b, "Global Impact and Challenges of Unconventional Monetary Policies," IMF Policy Paper, September, 2013.

World Economics, Vol. 14, No.3, July-September 2013 "Strengthening the Early Warning Exercise: Enhancing IMF and FSB coordination," Bessma Momani and others.