World Economic and Financial Surveys

# Fiscal Monitor

## Fiscal Exit: From Strategy to Implementation

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World Economic and Financial Surveys

# FISCAL MONITOR
## November 2010

Fiscal Exit:
From Strategy to Implementation


International Monetary Fund

Production: IMF Multimedia Services Division
Typesetting: Alicia Etchebarne-Bourdin

**Cataloging-in-Publication Data**

Fiscal monitor—Washington, DC: International Monetary Fund, 2009–
v. ; cm.—(World economic and financial surveys, 0258-7440)

Irregular
Some issues have also thematic titles.
EAN ISBN 978-1-61635-047-5

1. Financial crises—Periodicals. 2. Global Financial Crisis, 2008–2009—Periodicals. 3. Finance, Public—Periodicals. 4. Fiscal policy—Periodicals. 5. Finance, Public—Forecasting—Periodicals. 6. Fiscal policy—Forecasting—Periodicals. I. International Monetary Fund. II. Series: World economic and financial surveys.
HB3722.F57



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We dedicate this issue of the *Fiscal Monitor*
to the memory of Richard Goode (1916-2010),
the first Director of IMF's Fiscal Affairs Department

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# Preface

This edition of the *Fiscal Monitor* continues to survey and analyze the latest public finance developments, updates reporting on fiscal implications of the crisis and medium-term fiscal projections, and assesses policies to put public finances on a stronger footing. Beginning with this issue, the *Monitor* will be available in print, as well as online.

The projections included in this *Monitor* are based on the same database used for the October 2010 *World Economic Outlook* (WEO) and *Global Financial Stability Report* (GFSR) (and are referred to as "IMF staff projections"). The fiscal projections refer to the general government unless otherwise indicated. Short-term fiscal projections are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions. The medium-term fiscal projections incorporate policy measures that are judged by the IMF staff as likely to be implemented. For countries supported by an IMF arrangement, the medium-term projections are those under the arrangement. In cases where the IMF staff has insufficient information to assess the authorities' budget intentions and prospects for policy implementation, an unchanged cyclically adjusted primary balance is assumed, unless indicated otherwise.

The *Fiscal Monitor* is prepared by the IMF Fiscal Affairs Department under the supervision of Carlo Cottarelli, Director of the Department, and Philip Gerson, Senior Advisor. This issue is coordinated by Manmohan S. Kumar, Assistant Director and Chief, Fiscal Policy and Surveillance Division. Other principal contributors include Emre Alper, Olivier Basdevant, Carlos Caceres, Giovanni Callegari, Xavier Debrun, Lorenzo Forni, Marc Gerard, Raquel Gomez Sirera, Jack Grigg, Julia Guerreiro, Jiri Jonas, Philippe Karam, Daehaeng Kim, Thornton Matheson, Ruud De Mooij, Andrea Schaechter,

Anna Shabunina, and Jaejoon Woo. In addition, contributions were provided by Javier Arze del Granado, Emanuele Baldacci, Thomas Baunsgaard, Fabian Bornhorst, Nina Budina, Benedict Clements, Asmaa El Ganainy, Borja Gracia, Bertrand Gruss, Mark Horton, Richard Hughes, Alvar Kangur, Kenichiro Kashiwase, Javier Kapsoli, Mick Keen, Andrea Lemgruber, Junhyung Park, Victoria Perry, Iva Petrova, and Mauricio Soto. Maria Delariarte and Nadia Malikyar provided excellent administrative and editorial assistance. From the IMF External Relations Department, Nancy Morrison edited the volume, and Sean Culhane and Joanne Blake managed its production.

The analysis has benefited from comments and suggestions by staff from other IMF departments. Both projections and policy considerations are those of the IMF staff and should not be attributed to Executive Directors or to their national authorities.

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This version of the Fiscal Monitor is available in full on the IMF's website, www.imf.org.

Further inquiries may be sent to the Fiscal Policy and Surveillance Division, Fiscal Affairs Department.

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# Main Themes

*Fiscal policy is beginning a gradual shift from supporting demand to reducing deficits, but at different speeds depending on country circumstances. Deficits are falling this year in most emerging market and low-income countries, mostly because of improved cyclical conditions. Deficits are also falling in several advanced economies, in some cases because market pressures have dictated an early fiscal exit. Tightening will become broader and driven by discretionary measures in both advanced and emerging economies in 2011. However, public debt ratios are still rising rapidly in advanced economies, and fiscal risks remain elevated. Further clarity on exit plans and reforms to address long-term fiscal costs would help.*

Chapter 1 reviews fiscal developments and trends in 2010–11. The global fiscal deficit is projected to fall from 6¾ percent of GDP in 2009 to 6 percent this year, in line with earlier projections in the *Fiscal Monitor*. Deficit declines are widely spread—some 60 percent of countries covered by the *Monitor* are projected to post smaller deficits in 2010 than last year. However, the declines owe much to improved economic conditions. The cyclically adjusted balance—which discounts changes resulting from economic growth—is expected to worsen this year. In 2011, 90 percent of the countries are projected to record smaller deficits, and the cyclically adjusted balance is expected to improve by 1 percentage point of GDP in advanced economies (and close to this in emerging economies). This pace of adjustment is broadly appropriate, as it strikes a balance between addressing market concerns about fiscal fundamentals and avoiding an abrupt withdrawal of support to the nascent recovery. However, if growth threatens to slow appreciably more than expected in the baseline projections in the IMF *World Economic Outlook*,

advanced economies with fiscal room should let the fiscal stabilizers operate and slow the pace of adjustment. The pace of adjustment varies significantly across countries, with country differences in advanced economies explained primarily by the initial level of the deficit and market pressure.

Chapter 2 looks at borrowing requirements and sovereign debt market conditions. While a sharp deterioration in market sentiment compelled some advanced economies to tighten fiscal policy this year, other economies considered safe havens continue to benefit from very low interest rates. The onset of the crisis was marked by an increase in home bias and a decrease in maturities in sovereign bond markets. With the stabilization of market conditions, the shortening of the maturity structure has now started reversing. Net purchases of government securities by central banks have been much more limited relative to 2009, although they were sizable in the euro area during the second quarter of this year.

Chapter 3 discusses the medium-term fiscal adjustment plans put forward to restore or maintain market confidence going forward. A review of fiscal plans for a group of 25 countries (including all of the G-20) finds that 90 percent of them have announced that they will gradually reduce their medium-term deficits, with plans typically through 2013. The overall pace of underlying adjustment envisaged is broadly appropriate. The vast majority of adjustment plans are intended to be expenditure-based, which is also appropriate in light of the high spending level in many of them. However, plans fall short of what is required in various respects. First, in many cases detailed adjustment measures have not been identified. Second, while some plans include measures addressing short-term pressures from health care, none include the comprehensive reforms that are needed to contain medium- and long-term spending pressures in this area. As the net present value of increases in health and pension spending is expected to vastly outweigh the budgetary costs of the crisis, this is an important failing. Third, while most countries have introduced measures to mitigate the impact of the financial

crisis on vulnerable groups, very few are planning fundamental reforms of their social welfare systems, such as improved targeting of benefits. Finally, few countries have explicitly committed to a long-run target for their public debt ratio, or—where such a target predated the crisis—have indicated clearly when they intend to achieve it, thus leaving the ultimate fiscal strategy goal uncertain.

Chapter 4, based on the earlier discussion, focuses on the likelihood of two possible (unpleasant) outcomes: that, over the short to medium term, sovereign rollover problems arise at a regional or global level; and that, over the longer run, debt ratios stabilize, but at elevated levels. Overall, the risk that these events materialize remains high by historical standards for advanced economies—especially those that are already under market pressure. They are lower but nontrivial for emerging markets. Risks arising from macroeconomic uncertainty are generally higher than six months ago, amid concerns that the global recovery may be losing steam, while those related to the quality of plans have broadly eased, as countries have announced or even begun implementing at least some aspects of their fiscal exit strategies. Global market sentiment has improved toward emerging markets but worsened toward those advanced economies that were already under pressure in May 2010.

Chapter 5 concludes with an assessment of four topical fiscal policy questions:

- *Pension reforms*. Various reforms have been proposed to address long-term pension spending: what is their impact on economic growth? Significantly, the analysis finds that a two-year increase in the retirement age—the increase that would be needed to offset projected spending increases over the next two decades—would increase GDP by 1 percentage point in the short to medium run, on average, and by 4½ percentage points over the long run.

- *Financial sector taxation*. How can the tax system be used to reduce systemic financial sector risk? The *Monitor* summarizes the proposals put forward in a recent IMF report in this area, notably the "Financial Stability Contribution," proposed by the IMF to internalize systemic risk and raise revenues to offset future financial support needs.

- *Carbon pricing*. What are the fiscal implications of regimes to address the environmental impact of carbon-based fuels? Efficient carbon-pricing schemes could raise ¾ percent of GDP in advanced economies and 1½ percent of GDP in emerging economies within the next ten years, while targeted transfers could offset any impact on the poor.

- *The VAT*. How can revenues from value-added taxes (VATs) be increased to support consolidation? Advanced economies should concentrate on eliminating preferential rates. Emerging economies should concentrate on improving compliance.

CHAPTER

# 1 Fiscal Developments and Near-Term Outlook

## At a Glance

*This chapter discusses fiscal developments in 2010, and the fiscal adjustment expected in 2011. It shows that while the overall fiscal deficit for the world is projected to decline somewhat this year, this owes much to improved economic conditions. Fiscal adjustment, particularly in advanced economies, will gather pace next year, which is appropriate given the need to strike a balance between improving fiscal fundamentals and avoiding an abrupt withdrawal of support to economic recovery. There are considerable differences in the pace of adjustment across advanced economies, which are explained primarily by the initial level of deficit and market pressures. The chapter finds that public debt ratios in advanced economies will increase further this year and are projected to be about 29 percentage points of GDP higher by end-2011 than before the crisis, while in emerging economies they will start declining. In advanced economies net purchases of government securities by central banks have generally declined with respect to 2009, and the recovery of direct support to the financial sector is proceeding gradually.*

## Fiscal Developments in 2010: The Beginning of the Fiscal Exit

Fiscal deficits have started declining somewhat in 2010, especially in emerging and low-income economies, where economic activity is picking up

more rapidly. The overall fiscal deficit for the world is projected to decrease from 6¾ percent of GDP in 2009 to 6 percent in 2010, in line with projections in the May *Fiscal Monitor* (Table 1.1; Figure 1.1). Among the countries covered in the *Monitor*, the share of those with a declining deficit reaches 60 percent (three times more than in 2009). This percentage rises to nearly 70 percent among emerging markets. The narrowing of deficits is stronger in Latin America and in some Asian countries, reflecting faster economic recovery and policy tightening. Among the advanced economies, more diverse economic and financial conditions have translated into greater fiscal heterogeneity, with deficits declining in only about half of them.

**In advanced economies** on average, fiscal policy remains supportive of economic activity, although fiscal exit has picked up speed in some European countries.

- While the average deficit of these economies is projected to decline from 9 percent of GDP in 2009 to 8¼ percent of GDP in 2010, this is due to lower financial sector support in the United States, net of which the deficit is projected to be unchanged, on average. Deficits are expected to increase in many major economies (France, Germany), primarily reflecting fiscal stimulus measures provided this year (Box 1.1). In some of these economies, revenue performance is turning out to be weaker and deficits somewhat larger than projected in the May *Monitor*. Ireland has the highest deficit of this group—and the largest upward revision—owing to larger banking sector bailout costs than expected in May.[1]

[1]The figures for the United States reported in the tables of this *Monitor* are consistent with those in the October 2010 *World Economic Outlook*. However, preliminary federal government data released since the publication of the WEO suggest the 2010 general government deficit may be smaller. The figures in this *Monitor* for Ireland incorporate the outlays on bank recapitalization announced in late September classified by the Irish authorities as expenditure amounting to about €30 billion (20 percent of GDP).

## Table 1.1. Fiscal Balances, 2007–11

***(Percent of GDP)***[1]

| | 2007 | 2008 | 2009 | Projections 2010 | Projections 2011 | Difference from 2010 May *Fiscal Monitor* 2009 | Difference from 2010 May *Fiscal Monitor* 2010 | Difference from 2010 May *Fiscal Monitor* 2011 |
|---|---|---|---|---|---|---|---|---|
| **Overall Balance** | | | | | | | | |
| World | -0.4 | -2.0 | -6.8 | -6.0 | -4.9 | -0.1 | -0.1 | -0.2 |
| Advanced Economies | -1.1 | -3.7 | -8.9 | -8.1 | -6.8 | -0.1 | 0.2 | -0.1 |
| United States | -2.7 | -6.7 | -12.9 | -11.1 | -9.7 | -0.4 | -0.1 | -1.4 |
| Euro Area | -0.6 | -2.0 | -6.3 | -6.7 | -5.1 | 0.1 | 0.2 | 1.1 |
| Germany | 0.2 | 0.0 | -3.1 | -4.5 | -3.7 | 0.1 | 1.2 | 1.4 |
| France | -2.7 | -3.3 | -7.6 | -8.0 | -6.0 | 0.3 | 0.2 | 0.9 |
| Italy | -1.5 | -2.7 | -5.2 | -5.1 | -4.3 | 0.1 | 0.1 | 0.6 |
| Spain | 1.9 | -4.1 | -11.2 | -9.3 | -6.9 | 0.3 | 1.1 | 2.7 |
| Japan | -2.4 | -4.1 | -10.2 | -9.6 | -8.9 | 0.1 | 0.2 | 0.2 |
| United Kingdom | -2.7 | -4.9 | -10.3 | -10.2 | -8.1 | 0.6 | 1.2 | 1.3 |
| Canada | 1.6 | 0.1 | -5.5 | -4.9 | -2.9 | -0.4 | 0.2 | -0.1 |
| Others | 4.3 | 1.9 | -0.9 | -0.7 | 0.0 | 0.2 | 0.8 | 0.8 |
| Emerging Economies | 0.0 | -0.6 | -4.8 | -4.2 | -3.3 | 0.1 | -0.3 | -0.3 |
| Asia | -0.8 | -2.3 | -4.7 | -4.5 | -3.9 | 0.1 | 0.0 | -0.3 |
| China | 0.9 | -0.4 | -3.0 | -2.9 | -1.9 | 0.0 | 0.1 | 0.1 |
| India | -4.2 | -7.6 | -10.1 | -9.6 | -8.8 | 0.4 | -0.4 | -1.1 |
| ASEAN-5 | -1.2 | -0.7 | -3.6 | -3.0 | -2.9 | 0.0 | 0.2 | -0.2 |
| Europe | 2.1 | 0.3 | -6.1 | -5.1 | -4.0 | 0.0 | -1.1 | -0.5 |
| Russia | 6.8 | 4.3 | -6.2 | -4.8 | -3.6 | 0.0 | -1.9 | -1.0 |
| Latin America | -1.2 | -0.6 | -3.7 | -2.6 | -2.2 | 0.0 | -0.1 | 0.3 |
| Brazil | -2.6 | -1.3 | -3.2 | -1.7 | -1.2 | 0.1 | -0.2 | 0.8 |
| Mexico | -1.3 | -1.4 | -4.9 | -3.6 | -3.0 | -0.2 | -0.3 | 0.0 |
| Low-Income Economies | -1.8 | -2.0 | -4.4 | -3.4 | -3.2 | -0.3 | 0.3 | 0.3 |
| Oil producers | 2.2 | 1.9 | -4.7 | -3.2 | -2.2 | 0.0 | -0.8 | -0.3 |
| G-20 Economies | -0.9 | -2.7 | -7.6 | -6.8 | -5.6 | 0.0 | 0.0 | -0.2 |
| Advanced G-20 Economies | -1.7 | -4.3 | -9.5 | -8.7 | -7.4 | -0.1 | 0.2 | -0.3 |
| Emerging G-20 Economies | 0.3 | -0.3 | -4.7 | -4.0 | -3.2 | 0.1 | -0.3 | -0.2 |

Table 1.1 *(concluded)*

| | | | | Projections | | Difference from 2010 May *Fiscal Monitor* | | |
|---|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2009 | 2010 | 2011 |
| **Cyclically Adjusted Balance[2]** | | | | | | | | |
| Advanced Economies | -1.5 | -3.3 | -5.7 | -6.1 | -5.2 | 0.2 | 0.5 | 0.4 |
| United States[3] | -2.1 | -4.8 | -7.2 | -7.9 | -7.0 | 0.7 | 1.3 | 0.3 |
| Euro Area | -1.7 | -2.7 | -4.7 | -4.9 | -3.8 | -0.3 | 0.0 | 0.7 |
| Germany | -0.5 | -0.5 | -0.9 | -3.3 | -2.9 | 0.2 | 0.5 | 0.8 |
| France | -3.2 | -3.2 | -5.6 | -6.3 | -4.6 | 0.5 | 0.3 | 1.0 |
| Italy | -2.3 | -2.4 | -3.3 | -3.5 | -2.9 | 0.0 | -0.1 | 0.5 |
| Spain | 0.2 | -5.2 | -9.7 | -7.5 | -5.3 | -0.8 | -0.2 | 1.9 |
| Japan | -2.5 | -3.6 | -7.3 | -7.6 | -7.2 | 0.1 | -0.1 | 0.2 |
| United Kingdom | -3.1 | -5.6 | -8.3 | -7.9 | -6.2 | -0.4 | -0.4 | 0.0 |
| Canada | 0.6 | 0.0 | -3.2 | -3.4 | -2.0 | -1.1 | -0.5 | -0.8 |
| Others | 2.3 | 0.6 | -1.3 | -1.4 | -0.9 | 0.0 | 0.3 | 0.5 |
| Emerging Economies | -0.8 | -2.0 | -4.2 | -4.0 | -3.2 | 0.0 | -0.4 | -0.3 |
| Asia | -1.0 | -2.5 | -4.6 | -4.4 | -3.5 | 0.1 | 0.0 | 0.0 |
| China | 0.3 | -0.8 | -3.1 | -3.2 | -2.2 | -0.1 | -0.1 | -0.1 |
| India | -3.9 | -7.4 | -10.1 | -8.7 | -7.2 | 0.4 | 0.5 | 0.6 |
| ASEAN-5 | -2.3 | -2.0 | -3.6 | -3.3 | -3.0 | 0.3 | 0.0 | -0.3 |
| Europe | 0.5 | -1.4 | -4.1 | -3.8 | -3.1 | 0.2 | -0.8 | -0.2 |
| Russia | 6.0 | 3.0 | -3.3 | -2.8 | -2.4 | 0.2 | -1.2 | -0.4 |
| Latin America | -1.4 | -1.1 | -2.4 | -2.5 | -2.1 | 0.1 | -0.4 | 0.1 |
| Brazil | -3.0 | -2.0 | -2.3 | -1.8 | -1.2 | 0.4 | -0.4 | 0.7 |
| Mexico | -0.8 | -1.0 | -2.7 | -2.8 | -2.3 | -0.1 | -0.5 | -0.1 |
| G-20 Economies | -1.2 | -2.8 | -5.1 | -5.4 | -4.5 | 0.2 | 0.2 | 0.1 |
| Advanced G-20 Economies | -1.7 | -3.5 | -5.8 | -6.4 | -5.5 | 0.3 | 0.6 | 0.4 |
| Emerging G-20 Economies | -0.5 | -1.8 | -4.3 | -3.9 | -3.1 | 0.0 | -0.4 | -0.3 |
| **Memorandum Items:** | | | | | | | | |
| Overall Balance | | | | | | | | |
| Advanced Economies[3] | -1.1 | -3.4 | -7.9 | -7.9 | -6.7 | -0.1 | 0.3 | -0.1 |
| United States[3] | -2.7 | -5.9 | -10.4 | -10.7 | -9.5 | -0.4 | -0.1 | -1.4 |

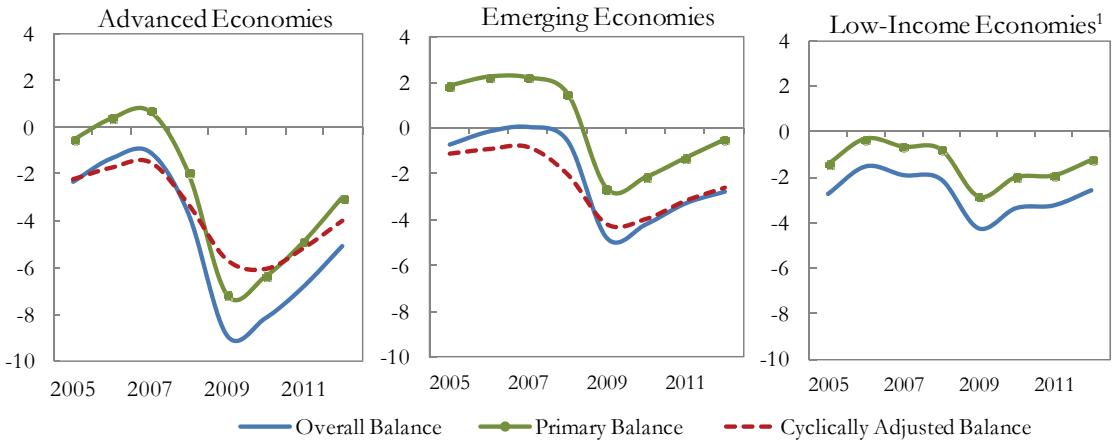
Sources: October 2010 WEO; and IMF staff calculations.

[1] All country averages are PPP-GDP weighted using 2009 weights.

[2] Percent of potential GDP.

[3] Excluding financial sector support in the United States.

**Figure 1.1. Fiscal Balances, 2005–11**
***(Percent of GDP)***




Source: October 2010 *WEO* and IMF staff calculations.
[1] Cyclically adjusted data are not available for several countries.

- However, fiscal exit has been initiated in countries where economic activity is picking up (Korea), or that have been subject to market pressure (Greece, Portugal). In the latter group, fiscal tightening is indeed stronger than anticipated in May, primarily reflecting additional expenditure cuts. The deficit is also declining in Japan owing to a smaller fiscal stimulus than in 2009 and a relatively strong recovery. In the United Kingdom, additional multiyear tightening measures adopted in June, including further expenditure cuts for 2010, should ensure the deficit remains broadly stable this year.

- Changes in cyclically adjusted balances (CAB) broadly mirror these developments, but a sizable upward revision in the potential output series for the United States implies a lower cyclically adjusted deficit than estimated earlier, with implications for future fiscal projections and risks (Chapter 4).[2]

[2]The U.S. potential GDP level has been revised upward, which has made the output gap more negative. As a result, the cyclically adjusted deficit has been revised by 1¼ percent of GDP in 2010 for the United States and by ½ percent of GDP for the advanced country average.

**Box 1.1. The G-20 Economies: Crisis-Related Discretionary Fiscal Stimulus[1]**
***(Percent of GDP)***

| | 2009 | 2010 | 2011 | Developments Relative to the May 2010 *Fiscal Monitor* |
|---|---|---|---|---|
| Argentina | 4.7 | 1.4 | … | 2009 estimate is 3.2 percentage points (pps) higher, due to higher (mostly capital) spending; 2010 estimate is 1.4 pps higher and includes mostly soft credit lines to promote investment, together with some revenue-enhancing measures. |
| Australia | 2.7 | 1.7 | 1.3 | The 2009 and 2010 estimates are 0.1 pps lower due to minor slippages in some investment categories within the stimulus package. |
| Brazil | 0.7 | 0.6 | 0.0 | No change in stimulus from earlier estimates. |
| Canada | 1.8 | 1.7 | 0.0 | No change in stimulus from earlier estimates. |
| China | 3.1 | 2.7 | … | No change in stimulus from earlier estimates. |
| France | 1.2 | 1.1 | 0.6 | 2009 estimate is 0.2 pps higher, due to a greater use of tax benefits and revision of GDP estimates; 2010 estimate is higher by 0.6 pps due to new measures in the additional 2010 budget (abolition of local business tax, and new public investment program). |
| Germany | 1.7 | 2.2 | 1.7 | 2009 and 2010 stimulus estimates are 0.2 pps and 0.1 pps higher, reflecting additional cost of stimulus measures and a revised profile for investment in 2009-10. |
| India | 0.5 | 0.3 | 0.0 | 2009 stimulus estimate is lower by 0.1 pps due to upward revision of GDP; the 2010 estimate is 0.1 pps lower, as the 2010/11 budget reversed half the reduction in indirect taxes taken as part of the stimulus and due to upward revision of GDP forecast. |
| Indonesia | 1.4 | 0.0 | 0.2 | 2009 stimulus estimate is 0.1 pps higher than previously announced; 2010 estimate is 0.6 pps lower since recent budget execution data point to under-spending of budgeted fiscal stimulus and a neutral fiscal stance. |
| Italy | 0.0 | 0.0 | 0.0 | 2010 stimulus estimate is lower by 0.1 pps due to upward revision of GDP forecast. |
| Japan | 2.8 | 2.2 | 1.0 | No change in stimulus from earlier estimates. |
| Korea | 3.6 | 1.1 | 0.0 | No change in stimulus from earlier estimates. |
| Mexico | 1.5 | 1.0 | 0.0 | No change in stimulus from earlier estimates. |
| Russia | 4.5 | 5.3 | 4.7 | 2010 stimulus higher by 2.4 pps reflecting the reclassifications of transfers to the pension fund (3.2 percent of GDP) as "anti-crisis" measures; and higher spending in the supplementary June budget. |

**Box 1.1** *(concluded)*

| | 2009 | 2010 | 2011 | Developments Relative to the May 2010 *Fiscal Monitor* |
|---|---|---|---|---|
| Saudi Arabia | 5.4 | 4.2 | 1.6 | 2009 and 2010 estimates are higher by 2.1 pps and 0.7 pps, respectively, as capital spending was larger than budgeted. |
| South Africa | 3.0 | 2.1 | 0.0 | No change in stimulus from earlier estimates. |
| Turkey | 1.2 | 0.5 | 0.0 | No change in stimulus from earlier estimates. |
| United Kingdom | 1.6 | 0.0 | 0.0 | Downward revision of 0.2 pps for 2010 mainly reflects spending cuts in the new June 2010 budget. |
| United States | 1.8 | 2.9 | 1.7 | 2009 and 2010 estimates of stimulus are based on the FY2011 Mid-Session Review and are unchanged from the May *Fiscal Monitor*. The 2010 and 2011 estimates are subject to a downside risk since some measures are still pending in Congress. |
| G-20 Average[2] | 2.1 | 2.1 | 1.1 | |
| Advanced | 1.9 | 2.1 | 1.2 | |
| Emerging | 2.4 | 2.0 | 0.9 | |

Sources: Survey of IMF G-20 desks; national budget documents and medium-term fiscal plans.
Note: "…" denotes data are not available; "pps" denotes percentage points.
[1] Relative to pre-crisis baseline (see also May 2010 *Fiscal Monitor*, Appendix I; and November 2009 *Fiscal Monitor*, Annex Table 2). Discretionary tightening is not shown in this table.
[2] PPP-GDP weighted. Averages for 2011 do not include Argentina and China for which no information is available.

**In emerging economies**, the economic recovery—and, to a lesser extent, tightening measures and lower interest payments—are leading to a widespread decline in the fiscal deficit, albeit a still relatively contained one.

The overall deficit for this group is projected at 4¼ percent of GDP, against 4¾ percent of GDP in 2009, a somewhat less pronounced decline than expected in May (Table 1.1; Figure 1.1):

- *Latin America*. The reduction in fiscal deficits is largest and most widespread in Latin America. A withdrawal of discretionary fiscal stimulus is under way in some countries in light of either a sharp rebound of economic activity and rising export commodity prices (Brazil) or sustainability concerns (Mexico). Alongside these developments, interest

payments for several countries in the region are expected to be significantly smaller than earlier anticipated, reflecting low interest rates in some cases and a decline in debt ratios.

- *Emerging Asia.* Fiscal deficits are declining in emerging Asia as several economies recover more strongly and countries start tightening fiscal policy (India, Malaysia, Thailand). However, China's fiscal deficit is projected to narrow only marginally as large fiscal stimulus measures continue.

- *Emerging Europe.* Fiscal developments are more diverse in emerging Europe. The overall decline in the deficit is largely driven by the strengthening of the fiscal position of the Russian Federation, even though the improvement is smaller than projected because of lower oil prices and additional stimulus measures. Several emerging economies in Europe facing market concerns about sustainability have started to tighten fiscal policy (Latvia, Lithuania, Romania, Ukraine). But in some countries, deficits continue to widen in 2010 as revenue collection remains weak (Bulgaria) or sticky spending raises expenditure ratios in light of sharp output shocks (Estonia, Latvia).

- *Emerging economies as a group.* The improvement in the fiscal balances for emerging economies is still driven mostly by the economic recovery, as the cyclically adjusted balance (CAB) has improved only marginally (¼ percentage point of GDP) compared to 2009.

**In low-income countries (LICs)**, deficits are also expected to decline, reflecting higher tax revenues and grants, although with considerable variation across countries. After rapidly expanding in 2009—when fiscal policy played a countercyclical role in contrast with earlier downturns—the average fiscal deficit is expected to decline from 4½ percent of GDP in 2009 to 3½ percent of GDP this year:

- *Sub-Saharan Africa.* The overall balance is expected to improve in 2010 by ¾ percentage point in sub-Saharan Africa. The tightening partly reflects expenditure measures, including the reversal of stimulus measures in countries that implemented these in 2009. Most countries are expected to

have moderate fiscal tightening, with larger adjustments expected in Liberia, Madagascar, and Malawi.

- *Emerging Asia*. The fiscal tightening is stronger in Asian LICs, with the overall balance expected to rise by 1¾ percentage points. This reflects in particular fiscal efforts in Cambodia, Mongolia, and Vietnam.
- *Other LICs*. For the remaining LICs in Europe, Latin America and the Caribbean, and the Middle East, the overall balance is projected to improve by about 1 percentage point. Some countries, though, are implementing much larger adjustments (e.g., Armenia, Grenada, Nicaragua).

**Among oil producers**, fiscal balances have also strengthened, given higher oil prices in 2010 and fiscal tightening measures in some countries (the Russian Federation, Saudi Arabia). The overall deficit for this group of economies is projected to decline by 1½ percentage points in 2010. This improvement, however, is half that envisaged in May, reflecting weaker than expected oil prices and additional fiscal stimulus in the Russian Federation and Saudi Arabia.

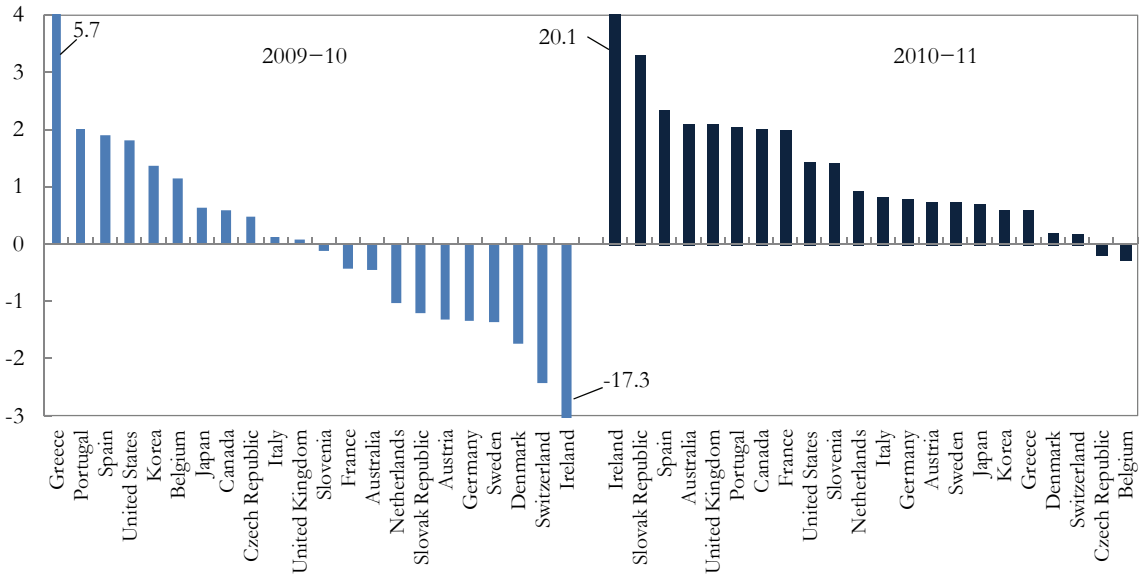
## Outlook for 2011: Broader Fiscal Adjustment

With the projected firming of the recovery, fiscal exit will start in earnest in 2011 for most countries, but at significantly different speeds.

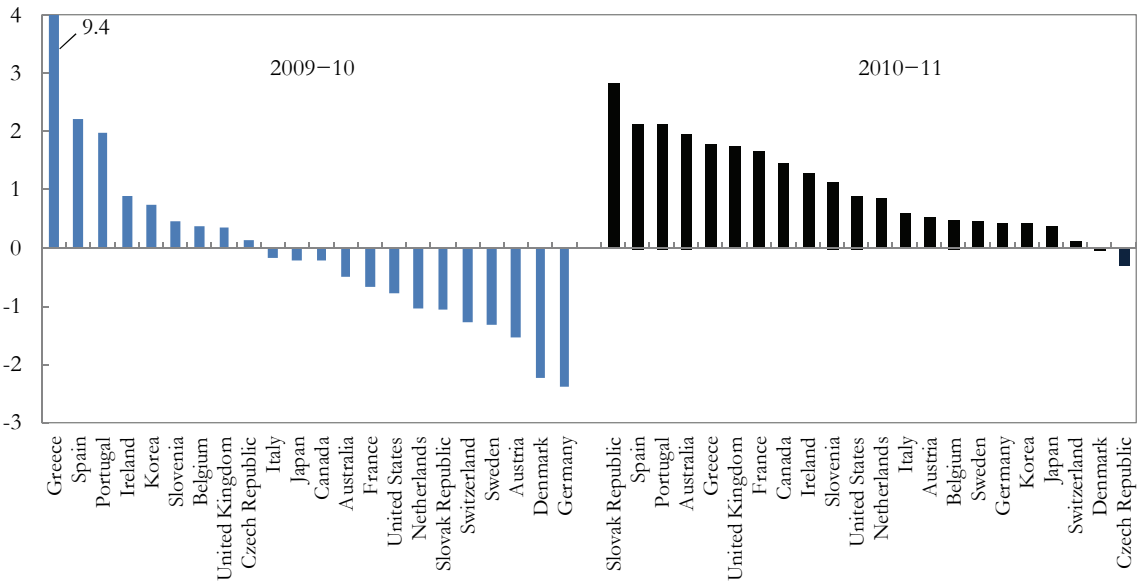
- *Advanced countries as a group*. Consolidation efforts will be a key driver of the expected decline in the overall deficit of advanced countries by 1¼ percent of GDP (with the percentage of these countries showing a declining deficit rising to 90 percent). The corresponding improvement in the CAB by about 1 percentage point (Table 1.1; Figure 1.1) almost entirely reflects the unwinding of discretionary fiscal stimulus introduced in 2009–10 (Box 1.1). Overall, the size of the adjustment (Figure 1.2) strikes an appropriate balance between the need to put public finances back on a sustainable path and supporting the economic recovery (see Box 1.2; Blanchard and Cottarelli, 2010; and IMF, 2010a).

## Figure 1.2. Selected Advanced Economies: Change in Fiscal Balances (2009–11)

### a. Change in Overall Balance (Percentage points of GDP)




### b. Change in Cyclically Adjusted Balance (Percentage points of potential GDP)




Sources: October 2010 WEO; and IMF staff estimates.
Note: Excluding financial sector support, the overall deficit in the United States is estimated to increase in 2010 by ¼ percentage point of GDP and decline by 1¼ percentage point of GDP in 2011.

## Box 1.2. To Tighten or Not to Tighten: This Is the Question

The debate on what fiscal policy should do in advanced countries in 2011 has been heated in recent months. Surely—argues one side—it is folly to tighten fiscal policy at a time when unemployment is at a record high. Surely—argues the other—it is reckless not to tighten fiscal policy when public debt is at a record high. Both sides have compelling arguments, and a policy that blends these policy prescriptions—a down payment on consolidation now, with continued gradual tightening over the medium term—is needed.

An abrupt, front-loaded tightening is risky and should be avoided, except when market conditions make it inevitable. As discussed in Chapter 3 of the WEO, fiscal tightening is likely to reduce GDP growth (the multiplier is small—0.5 to 1—but is not zero), compared to a situation in which fiscal policy is not tightened and financing continues to remain easy for the government. Thus, given the relatively slow pace of economic recovery, stepping on the brakes with excessive enthusiasm would not be appropriate unless there is acute market pressure.

So why not delay fiscal adjustment altogether? There are two reasons (see also discussion in Chapter 4). First, markets could lose confidence in the willingness of governments to pay back their debt. Markets may now be too pessimistic about some countries (Chapter 2), but that does not mean that risks can be ignored. The easy financing conditions that most advanced economies continue to enjoy—which reflect a range of factors noted in Chapter 2—may suggest that the risk of a loss of market confidence is remote for now. But markets typically react late and abruptly (spreads on Greek debt were as low as 100 basis points just one year ago). Second, high deficits raise public debt and there is evidence that high debt harms growth: a 10 percentage point increase in debt lowers annual potential output growth by some 0.15 point in advanced countries (Kumar and Woo, 2010), not a trivial amount for countries where potential growth is already fairly low.

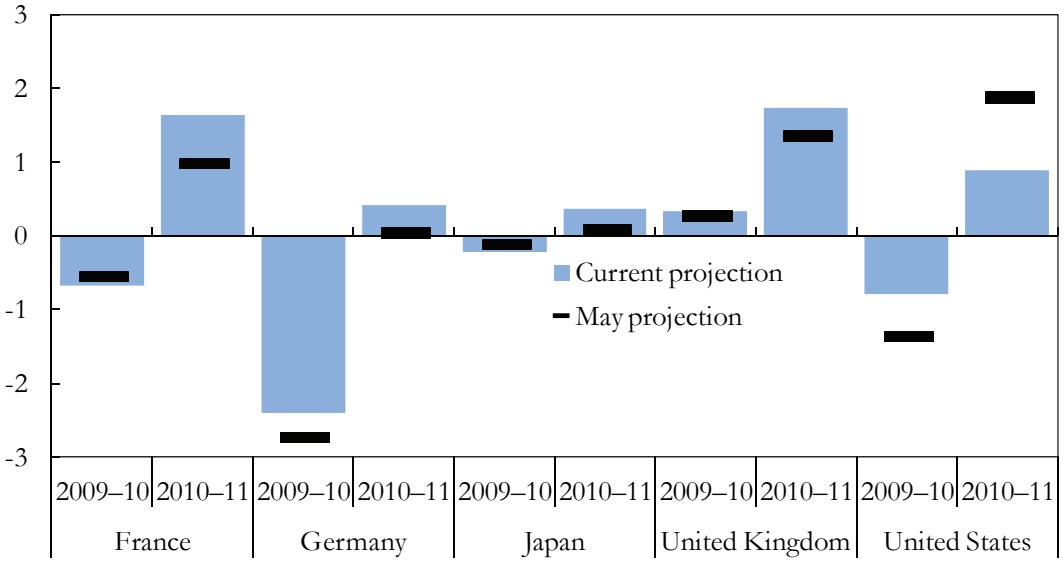
The ideal course of action would be to avoid any tightening now, while also credibly committing to future tightening. This is why this *Monitor* discusses in depth the adequacy of medium-term adjustment plans (Chapter 3). Unfortunately some up-front tightening is likely to be needed to ensure that future plans are credible. Some may argue that an immediate reduction in the deficit can be avoided if reforms to address long-term spending pressures (from pensions and health care) are implemented. But these reforms are already long overdue: they are needed simply to avoid a further increase in public debt, not to reduce it. Be this as it may, progress remains inadequate on these long-term reforms.

How much adjustment is "just right" in this Goldilocks world? The WEO shows that a reduction in the advanced economies' cyclically adjusted deficit by about 1 percentage point in 2011 would be consistent with a continuation of the world recovery at a time when private sector demand is stirring. Country conditions of course differ, and some countries are planning to do more, while others are planning to do less. This is appropriate in light of different fiscal, cyclical, and market conditions. At the same time, if economic activity threatens to fall short of WEO projections, maintaining adequate flexibility will be necessary. In that case, countries with fiscal space should let the automatic stabilizers operate fully and slow the pace of structural adjustment.

- *Differences across advanced countries.* The extent of the fiscal tightening varies significantly across advanced countries. The three largest advanced economies envisage a relatively back-loaded or evenly spread adjustment: in CAB terms, the expected retrenchment in Germany, Japan, and the United States[3] amounts to ½, ½, and 1 percentage point of GDP, respectively (Figure 1.3), against larger average adjustments over the medium term (Chapter 3). In some advanced economies where the cyclically adjusted deficits were high, governments opted for accelerating the pace of adjustment in comparison to earlier announcements. France's deficit is now projected to decline by 2 percentage points in 2011, ¾ percentage point more in cyclically adjusted terms than expected earlier, mostly because of new revenue measures. In the United Kingdom, the deficit is also projected to decline by 2 percentage points next year, 1¼ percentage points more than expected in May, as the recent budget included additional tightening measures (an increase in the VAT rate, capital spending cuts, and a nominal public sector wage freeze). In Portugal and Spain, additional adjustment for 2011 was announced in the wake of market pressures in May with a view to reducing deficits by a further 2 and 2¼ percentage points of GDP, respectively.
- *For emerging economies*, the improvement in the fiscal accounts will be driven by discretionary actions—contrary to 2010. Their overall deficit is projected to decline by 1 percent of GDP from its 2010 level, largely reflecting an improvement of the CAB by ¾ percent of GDP, with the bulk of it accounted for by the unwinding of the fiscal stimulus.

[3]Should the 2010 outturn prove stronger than projected in the *Monitor,* the associated tightening implied in the 2011 projection would be smaller. This projection does not include the effect of the new stimulus package announced by the U.S. administration in mid-September. If all components of such a package were approved and implemented without delay, there would be almost no change in the fiscal deficit of the United States in 2011, with respect to the previous year. A sizable component of this package is the provision allowing an early depreciation of capital, which would have a negative impact on the fiscal accounts in 2011 but a positive impact in later years. The projection also assumes that the cuts in personal income tax rates introduced by the Bush administration are allowed to expire for taxpayers earning more than US$250,000. The decline in the CAB is about half what had been projected in the May *Monitor* because of the postponement to 2011 of some stimulus spending initially projected for 2010.

**Figure 1.3. Selected Advanced Economies: Change in the Cyclically Adjusted Balance, 2009–11**
***(Percent of potential GDP)***




Sources: October 2010 WEO and IMF staff estimates.

However, there is considerable variation among emerging economies, pointing to contrasting fiscal policy responses. Fast-growing economies with excessive external surpluses and low debt appear likely to appropriately delay fiscal tightening. In others where debt is relatively high and external positions are broadly in line with medium-term fundamentals, fiscal tightening is expected to start in the near term (Chapter 3).

Elsewhere, the strengthening in fiscal balances is also varied, primarily reflecting the uneven recovery and the associated revenue performance. In *low-income countries*, the fiscal adjustment in 2011 is expected to be more modest than in 2010, with a decline in the overall deficit of ¼ percent of GDP. The improvement primarily reflects a cyclical uptick in revenue collections. The outlook for commodity exporting LICs indicates that the fiscal adjustment will be slightly larger (about ½ percent of GDP). *Oil producers* are also expected to reduce their overall deficit in 2011 (by 1 percent

of GDP) because of a rebound in growth, as well as the unwinding of the stimulus in Saudi Arabia and, to a lesser degree, in the Russian Federation.

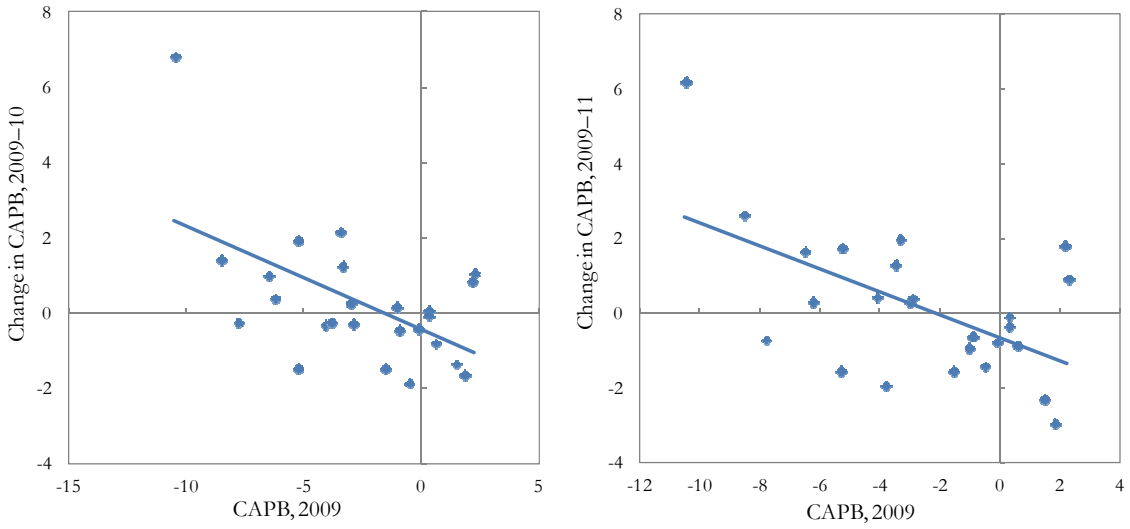
## The Pace of Fiscal Consolidation: What Explains the Differences Across Advanced Economies?

The considerable variation in the pace of adjustment across advanced economies mostly reflects differences in initial fiscal conditions, and market pressures. These factors explain more than two-thirds of the cross-country dispersion in the magnitude of fiscal consolidation envisaged in 2010–11:[4]

- The initial state of public finances in the immediate aftermath of the crisis is a key determinant of the pace of consolidation. In particular, high deficit-to-GDP ratios in 2009 are associated with larger adjustment during 2010–11 (Figure1.4). High public debt—either before the beginning of the crisis (2007) or in 2009—tends to lead to stronger adjustment, but the effect is less clear. Finally, the deterioration in public finances during 2008–09 is not found to affect the size of the retrenchment, suggesting that the fiscal effort is commensurate with the medium-term adjustment need, rather than simply a reversal to the pre-crisis fiscal position.
- Market pressure seems to have a significant influence on the pace of fiscal adjustment over and above the impact of fiscal fundamentals, which are already reflected in the yields themselves. Specifically, countries facing higher borrowing costs in the immediate aftermath of the crisis generally tend to undertake larger adjustments in the near term (Figure 1.5).

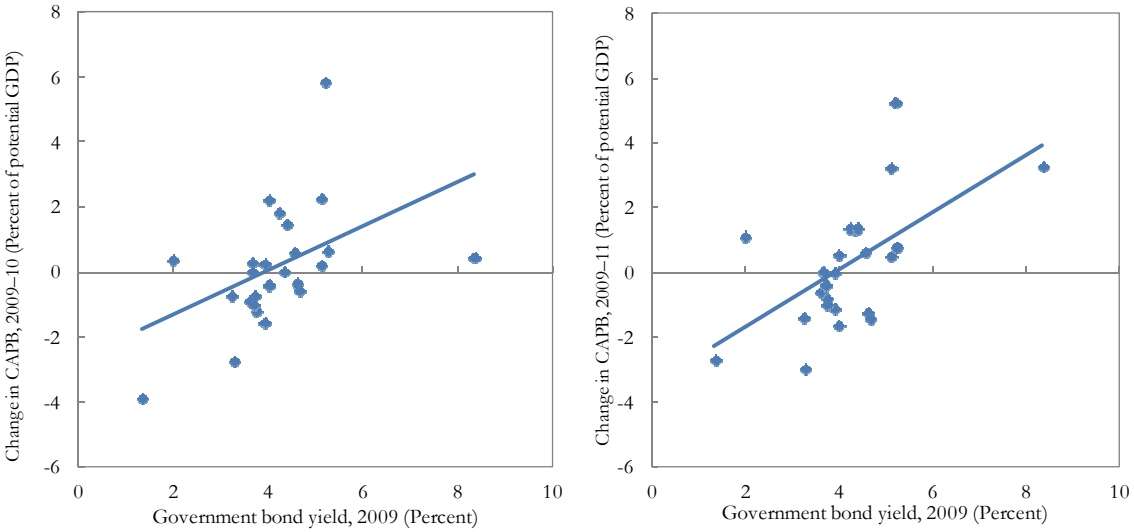
[4]This section is based on two cross-country regressions for 25 advanced economies for 2010 and 2011, respectively. The dependent variable is the change in the cyclically adjusted primary balance (CAPB) between 2009 and 2010, and between 2009 and 2011; the explanatory variables are the initial fiscal positions (public debt and CAPB in 2009, and the change in the CAPB between 2007 and 2009), government bond yields in 2009, and the cyclical position (measured by the unemployment rate in 2009 and the change in the unemployment rate over 2007–09).

## Figure 1.4. Adjustment and Initial Fiscal Deficits
*(Percent of GDP)*




Sources: October 2010 WEO; and IMF staff estimates.
Note: The panels depict conditional correlations (statistically significant at the 5 percent level) emerging from the multivariate regression described in footnote 4. The conditioning variables are as described in that footnote.

## Figure 1.5. Adjustment and Bond Yields




Sources: October 2010 WEO; and IMF staff estimates.
Note: The panels depict conditional correlations (statistically significant at the 5 percent level) emerging from the multivariate regression described in footnote 4. The conditioning variables are as described in that footnote.

- Evidence that the conditions of the real economy play a role in shaping fiscal adjustment is mixed. Among conventional business cycle indicators, only the unemployment rate is found to be associated with the size of the expected fiscal adjustment: economies where the labor market was hit harder tended to have less contractionary policies in the near term, possibly reflecting efforts to limit additional short-term costs that may arise from frontloaded fiscal retrenchment. But the effect is not as clear as for the fiscal and financial market variables.

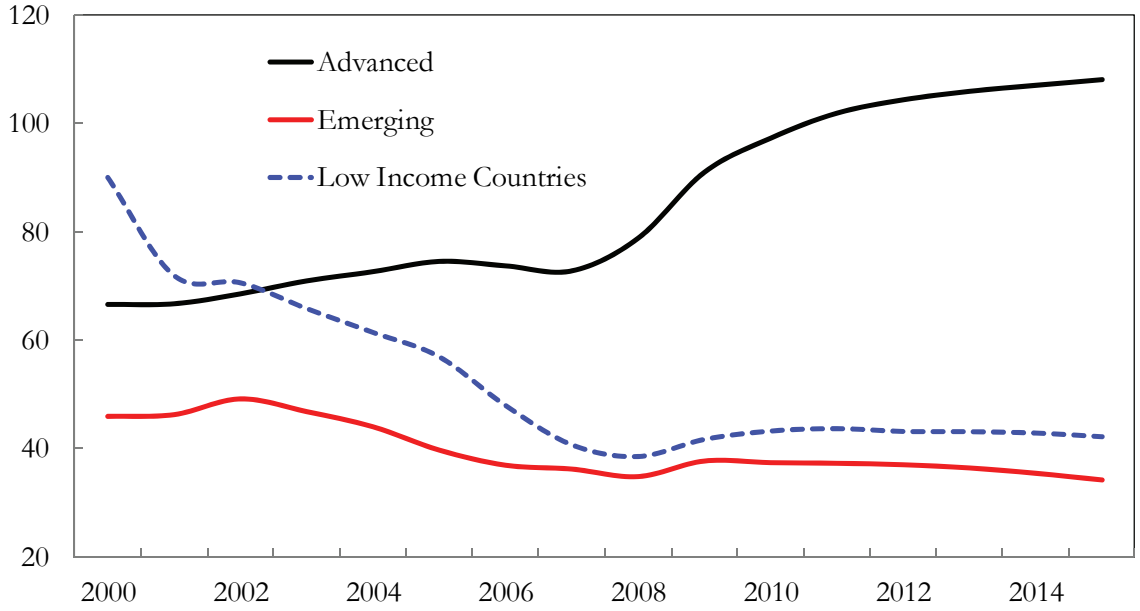
## Public Debt Still Rising, with Some Central Bank Support[5]

Fiscal deficits still exceed what would be necessary to stabilize the public debt ratio. In advanced economies, public debt by end-2011 is projected to be 29 percentage points of GDP higher than before the crisis, on average, with four-fifths of the increase having already occurred (Figure 1.6). Divergences within these economies are significant, though (Figure 1.7). In some economies (Canada, Iceland, Israel, Korea, Sweden, Switzerland), the planned fiscal tightening is sufficient to achieve a decline in debt ratios by 2011. Others will experience further sharp increases between 2009 and 2011, with the highest (between 15 and 42 percentage points) projected for Ireland, Greece, Japan, Spain, and the United States. However, for those countries that have frontloaded their fiscal consolidation in light of market pressure or political choice, the debt outlook has improved. Compared to the May *Monitor*, the projected 2011 public debt ratios have been revised down for Greece (by 5¾ percentage points of GDP), Spain (5¼ percentage points), Portugal (4¾ percentage points), and the United Kingdom (3 percentage points). In contrast, Ireland's 2011 debt ratio is now expected to be 21 percentage points higher than projected in May, reflecting additional banking sector support. Overall, the distribution of debt ratios among advanced economies has shifted dramatically since 2007, with 40 percent of

[5]The term public debt is used in this *Monitor* for simplicity, as indicating gross general government debt (see Glossary).

## Figure 1.6. General Government Gross Debt Ratios

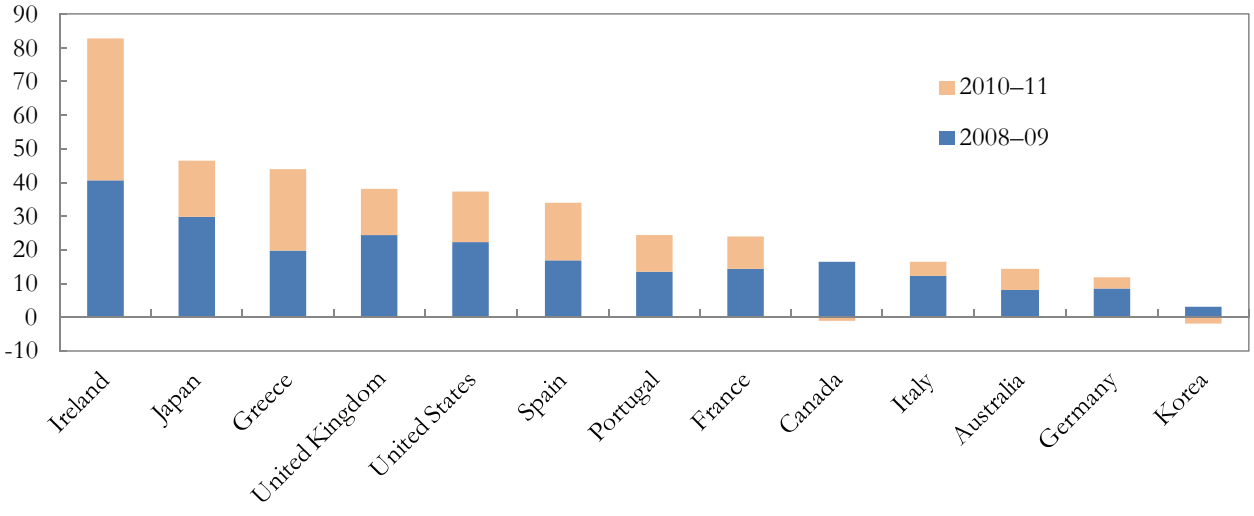
*(Percent of GDP; 2009 PPP-GDP weighted average)*




Source: IMF staff estimates based on October 2010 WEO projections.

## Figure 1.7. Selected Advanced Economies: Changes in Public Debt, 2008–11

*(Percentage points of GDP)*




Source: October 2010 WEO.

## Figure 1.8. Government Debt Distribution, 2007–11

*(Percent of GDP)*


Source: October 2010 WEO and IMF staff estimates.

countries now projected to have debt ratios above 80 percent of GDP by end-2011, compared to 17 percent pre-crisis (Figure 1.8).[6]

In contrast, in emerging economies, lower deficits and stronger growth are expected to reduce the average debt ratio slightly to 37¼ percent in 2011. There are, however, marked differences across economies, with the largest declines expected in the faster growing Asian and Latin American regions. In contrast, in emerging Europe, with the exception of Turkey, debt ratios are expected to increase—significantly, in some cases (Latvia, Lithuania). Because the impact of the crisis on emerging economies was generally small, the distribution of debt ratios has shifted less than for advanced economies (Figure 1.8): by end-2011, around half the emerging economies are projected to have debt ratios above 40 percent of GDP, compared to about 35 percent in 2007. Even this shift, however, mostly reflects emerging Europe, highlighting the regional concentration of fiscal vulnerabilities. This said, the resumption of the decline in the debt ratios of emerging markets is still

[6]FAD staff has compiled a new Historical Public Debt Database (HPDD) covering nearly the entire Fund membership and a long time period (from 1880 for most G-7 countries and a few other advanced and emerging economies). The HPDD is available at www.IMF.org and is linked to the WEO to provide for regular updates. An IMF Working Paper (Abbas et al., 2010) provides further information on the HPDD, including sources, definitions, and institutional coverage.

premised on a negative interest rate-growth differential in many countries (Appendix 1). The average primary balance is still negative (-1¼ percent of GDP) for this country group through 2011, although this is not unusually low by historical standards.

In LICs, debt ratios are expected to remain stable through 2010–11. The average debt-to-GDP ratio is expected to reach 43¾ percent in 2011 (Figure 1.6).[7] However, the combination of higher growth and an associated moderate fiscal improvement is expected to lead to a gradual decline in debt ratios over the medium term.

The evolution of net debt in advanced and emerging economies is generally similar to that of gross debt. Net public debt is around 25 percentage points of GDP lower than gross debt on average for advanced economies, and 10 percentage points lower for emerging markets (Statistical Table 8). Over 2008–10, asset acquisitions led to net debt accumulation being around 2 percentage points lower than gross debt in advanced economies. In emerging markets, capital losses and asset liquidations meant that net debt increased by 2 percentage points more than gross debt, on average.

In advanced economies, net purchases of government securities by central banks have declined with respect to 2009, although they were sizable in the euro area in the second quarter of this year. During 2009, about one-fifth of the U.S. deficit was financed by the Federal Reserve, while some 85 percent of the U.K. deficit was financed by the Bank of England (Table 1.2). During 2010, purchases by these two central banks were mostly limited to rolling over government debt holdings, although the Federal Reserve recently resumed net purchases in modest amounts, using the principal repayment of Government Sponsored Enterprise (GSE) debt and mortgage-backed securities (MBS) that it had acquired to stabilize the mortgage market. The European Central Bank started its purchases of euro area bonds in May 2010, and they now amount to about €61½ billion (¾ percent of GDP), with most of the intervention taking place in the second quarter of 2010.

[7]However, note that around two-thirds of the debt of LICs is concessional.

**Table 1.2. Selected Advanced Economies: Central Bank Securities Holdings and Net Purchases, 2008–10**

| | Central Bank Holdings, end of period | | | | | Central Bank Purchases | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2008 | 2009 | 2010 | | | 2009 | 2010 [1] | | |
| | | | Q1 | Q2 | Q3 | | Q1 | Q2 | Q3 |
| | (Percent of GDP) | | | | | (Percent of new net issuance) | | | |
| U.S. Federal Reserve | | | | | | | | | |
| Treasury securities | 3.2 | 5.2 | 5.2 | 5.2 | 5.4 | 20.9 | 0.0 | 0.0 | 2.3 |
| Agency Debt and MBS [2] | 0.1 | 7.2 | 8.3 | 8.6 | 8.4 | … | … | … | … |
| European Central Bank | | | | | | | | | |
| Securities Market Program [3] | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.0 | 0.0 | 16.0 | 1.2 |
| Bank of England | | | | | | | | | |
| Gilt Purchase under Asset Purchase Facility | 0.0 | 13.0 | 13.7 | 13.7 | 13.7 | 86.5 | 13.3 | 0.0 | 0.0 |

Sources: Monetary authorities and Haver Statistical Database.

[1] For quarterly data, the denominator was calculated by prorating the projected increase in the general government gross debt in 2010 as a proxy for the quarterly net issuance of government securities in 2010.

[2] MBS=Mortgage-backed securities.

[3] The ECB, statutorily, may purchase securities under this program only in the secondary market. In addition, the ECB purchased private-sector covered bonds, totaling €60 billion under the Covered Bond Purchase Program during June 2009 - June 2010, mostly in the secondary market.

## Financial Sector Support and Recovery to Date

With the ongoing economic recovery, there has been in general limited new direct financial sector support, with the striking exception of Ireland.[8] While most direct support measures pledged previously remain in place, their utilization in the three largest economies most affected by the financial crisis has increased only modestly since end-2009 and remains lower than generally expected at the peak of the crisis (Table 1.3). Even the small increase reflects mostly the additional purchase of GSE preferred shares (about US$60 billion) in the United States. The utilization of pledged capital

[8]Direct support includes capital injections and purchase of assets.

injections and asset purchases are broadly unchanged in Germany and the United Kingdom. There has been a sharp increase in public outlays for the banking sector in Ireland, however, related predominantly to the support to Anglo-Irish Bank. The uptake of guarantees continues to be markedly lower than the protection offered. Several liquidity support and guarantee programs expired in 2010, with only part of the available funding being utilized and without any guarantees being called.[9]

The recovery of direct support to the financial sector is proceeding gradually. By end-June 2010, recovery of outlays stood at 1½ percent of GDP, ¼ percentage point higher than at end-2009. As a result, the recovery rate of the utilized support increased from 21 percent to 25 percent. The bulk of the additional recovery has occurred through the repurchase of shares, sales of warrants, and dividend receipts in the United States. The current pace for recovery of outlays appears somewhat faster than has been the case historically, when the bulk of the recovery has typically occurred over a period of five to seven years post-crisis.

The net direct cost of financial sector support remains below historical norms, but contingent liabilities remain high. Although more outlays have been recovered since end-2009, the additional utilization of the pledged measures raised the average net fiscal cost marginally (by US$13 billion, or less than ¼ percent of GDP) among the three largest economies that have provided the bulk of the support (Table 1.3), bringing the average cost to 4.1 percent of GDP.[10] Prospects for further recovery in the medium term appear to be good. A mark-to-market valuation of some assets acquired by

[9]These include various crisis-related credit facilities in the United States (such as Term Auction Facility and Term Securities Lending Facility), as well as in Canada (Canadian Secured Credit Facility), and guarantee facilities in the United Kingdom (notably the Credit Guarantee scheme).

[10]The net fiscal cost is defined as total outlays net of recovery by end-June 2010. As further recovery will be possible by divesting assets that the government still holds, the net fiscal cost is an upper bound of the expected net loss (or negative worth) of financial sector support, which is included as transfer spending in the budget of some countries.

**Table 1.3. Selected Advanced Economies: Recovery of Outlays and Net Cost of Financial Sector Support[1]**
***(As of end-June 2010; Percent of GDP unless otherwise indicated)***

| | Direct Support | | Recovery | Net Direct Cost |
|---|---|---|---|---|
| | Pledged | Utilized | | |
| Germany[2] | 6.8 | 4.7 | 0.0 | 4.6 |
| United Kingdom | 11.9 | 7.3 | 1.2 | 6.1 |
| United States | 7.4 | 5.3 | 1.7 | 3.7 |
| Average (end-June 2010) | 7.9 | 5.4 | 1.4 | 4.1 |
| In billions of U.S. dollars | 1,549 | 1,074 | 265 | 809 |
| Average (end-Dec 2009) | 7.9 | 5.1 | 1.1 | 4.0 |
| In billions of U.S. dollars | 1,544 | 1,006 | 210 | 796 |

Sources: Country authorities; and IMF staff estimates.
Note: Updates reflect new measures, as well as some reclassification indicated by the authorities.
[1] The three countries shown in the table account for about three-quarters of worldwide financial sector support. For more details on the support measures provided by advanced G-20 economies, see Table 5 of the May 2010 *Fiscal Monitor*.
[2] For Germany, the pledged amount includes €85 billion (3½ percent of GDP) for asset purchases.

the government during the crisis, although still volatile, suggests that large losses are unlikely. There could even be net gains to the government when divesting the assets.[11] Nonetheless, although banking sector risks in Europe are generally considered to have declined since 2009, contingent liabilities arising from banking system losses are estimated to remain high in several European economies, ranging from under 1 percent of sovereign assets for Portugal and Spain up to 30 percent for Ireland (about 22 percent of GDP; see October 2010 GFSR). Moreover, the above cost estimates refer only to the cost of direct support to the financial sector. The broader cost of the crisis, including the fiscal impact of induced recession, has been much higher, as reflected in the surge in public debt in the advanced economies.

[11]For example, in the United Kingdom, £70 billion worth of common stocks were purchased for recapitalizing banks, less than £3 billion of which has been sold. The market value of the common stocks still held by the government was around £58 billion at end-2009, and improved further to £70 billion as of end-April, 2010. However, the cost recovery will also depend crucially on the timing of unwinding, and the scale of unwinding will affect the market values of assets.

CHAPTER

# 2 Sovereign Financing and Government Debt Markets

## At a Glance

*This chapter examines sovereign financing needs and developments in government bond yields and spreads. It finds that financing needs for many advanced economies will remain high and increase somewhat, while for emerging economies, financing needs, already moderate, will decline further. There appears to be a stabilization in the average government debt maturity in advanced economies, while the share of nonresident holding of government debt has declined somewhat. Yields have declined in countries regarded as safe havens although they have increased, and spreads have widened, for a few countries considered to be more at risk. There appears to be a negative correlation across countries between sovereign yields and growth prospects.*

## Sovereign Gross Financing Needs: Continuing at High Levels

The average gross financing need of the advanced economies, already high, is projected to increase somewhat in 2011. Higher maturing debt in 2011 is likely to increase the average financing need to about 27 percent of GDP (Table 2.1). This largely reflects developments in Japan, Greece, and—to a lesser extent—in Portugal and the United States, where higher maturing debt will more than offset the expected reduction in deficits. In contrast, deficits elsewhere are expected to shrink fast enough to secure lower gross financing

**Table 2.1. Selected Advanced Economies' Gross Financing Needs, 2010–11[1]**

*(Percent of GDP)*

| | 2010 | | | 2011 | | |
|---|---|---|---|---|---|---|
| | Maturing Debt | Budget Deficit | Total Financing Need | Maturing Debt | Budget Deficit | Total Financing Need |
| Japan | 43.4 | 9.6 | 53.0 | 48.9 | 8.9 | 57.8 |
| United States | 15.4 | 11.1 | 26.5 | 18.1 | 9.7 | 27.8 |
| Italy | 20.3 | 5.1 | 25.4 | 18.2 | 4.3 | 22.5 |
| Ireland[2] | 6.5 | 31.9 | 38.4 | 6.1 | 11.8 | 17.9 |
| Belgium | 17.8 | 4.8 | 22.6 | 18.4 | 5.1 | 23.4 |
| France | 14.3 | 8.0 | 22.3 | 16.0 | 6.0 | 22.0 |
| Spain | 10.8 | 9.3 | 20.1 | 11.0 | 6.9 | 17.9 |
| Portugal | 11.6 | 7.3 | 18.9 | 15.5 | 5.2 | 20.7 |
| Greece | 10.3 | 7.9 | 18.2 | 16.5 | 7.3 | 23.8 |
| Canada | 13.1 | 4.9 | 18.0 | 13.3 | 2.9 | 16.2 |
| United Kingdom | 5.3 | 10.2 | 15.5 | 7.5 | 8.1 | 15.6 |
| Germany | 8.5 | 4.5 | 13.0 | 9.1 | 3.7 | 12.8 |
| Finland | 9.1 | 3.4 | 12.5 | 9.3 | 1.8 | 11.1 |
| Sweden | 4.1 | 2.2 | 6.3 | 4.5 | 1.4 | 5.9 |
| Australia | 1.5 | 4.6 | 6.1 | 2.0 | 2.5 | 4.5 |
| Weighted Average | 17.0 | 9.1 | 26.1 | 19.3 | 7.6 | 26.9 |

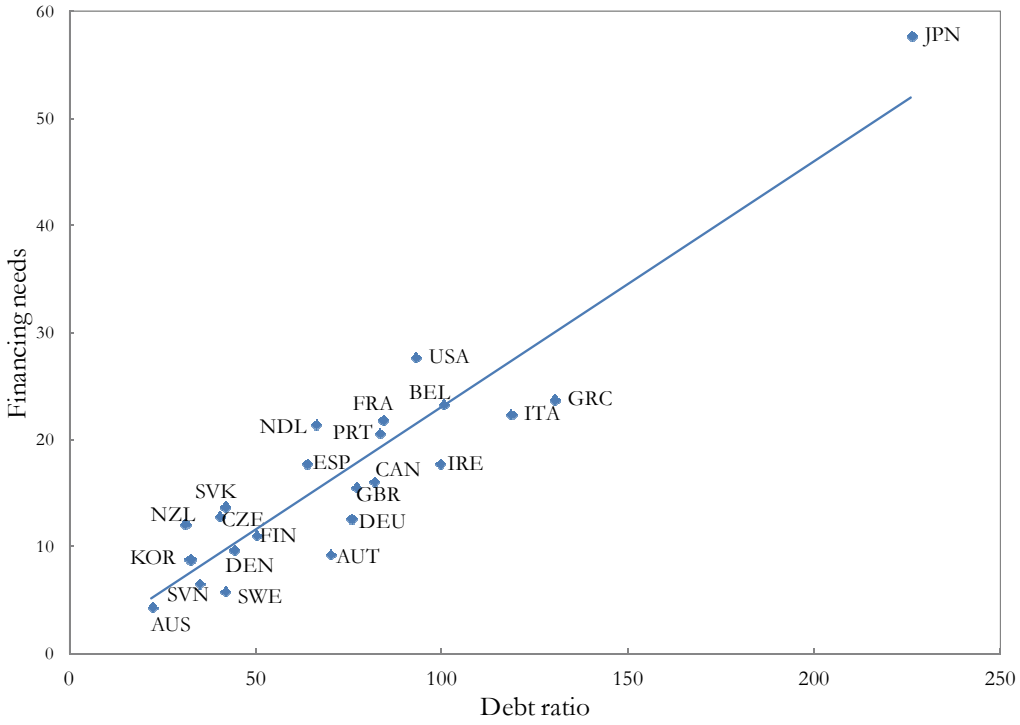
Sources: Bloomberg; and October 2010 WEO.

[1]For 2010, the table is based on January 2010 Bloomberg projections of maturing central government short- and long-term debt, and the October 2010 WEO projection of general government deficit. For 2011, maturing debt is based on Bloomberg projections from September 21, 2010, plus the projection of the short-term debt maturing in the remainder of 2010, as this will eventually add to the stock of debt maturing in 2011 (unless refinanced with longer-term debt maturing beyond 2011). Without this adjustment, it is not possible to compare 2010 and 2011 because 2011 would not capture the part of the short-term debt issued in the remainder of 2010 that would eventually mature in 2011.

[2] Ireland's deficit in 2010 reflects the increase due to outlays on bank recapitalization announced in late September classified by the Irish authorities as expenditure, amounting to about €30 billion (20 percent of GDP). However, these outlays are in the form of promissory notes, do not require any upfront financing from markets, and therefore are not included in financing need.

needs. Japan's financing need remains by far the largest, at over 50 percent of GDP, followed by the United States, Greece, Belgium, Italy, France, and Portugal at more than 20 percent of GDP. On average, maturing debt accounts for about two-thirds of the countries' financing needs, with the notable exceptions of Ireland and the United Kingdom, where it is less than half.

**Figure 2.1. Advanced Economies: General Government Debt (2010) and Financing Needs (2011)**
***(Percent of GDP)***



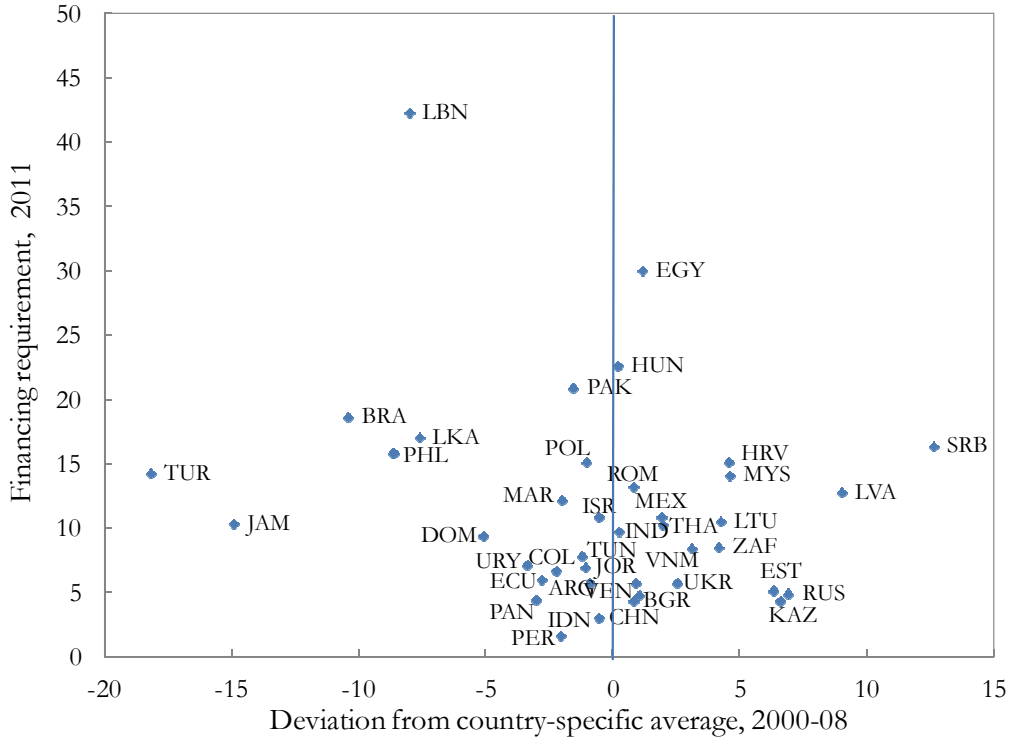

Sources: Bloomberg; and October 2010 WEO.

While countries with the highest stock of government debt also generally require the highest financing, substantial differences in fiscal deficits and average maturities explain the dispersion in financing needs (Figure 2.1).

Financing needs of emerging and low-income economies remain moderate compared to the advanced economies:

- Emerging economies continue to benefit from improved fiscal discipline and debt management before the crisis. For the group of 52 emerging economies, the median aggregate gross financing requirement peaked at 10½ percent of GDP in 2009, less than half the financing needs of advanced economies. That peak was only slightly higher than the 2000–08 average of 8 percent, and the financing needs are projected to decline to 9¾ percent of GDP in 2010 and 9 percent in 2011. While in some

**Figure 2.2. Emerging Economies: Financing Requirements in 2011 and Deviations from Past Averages**
***(Percent of GDP)***

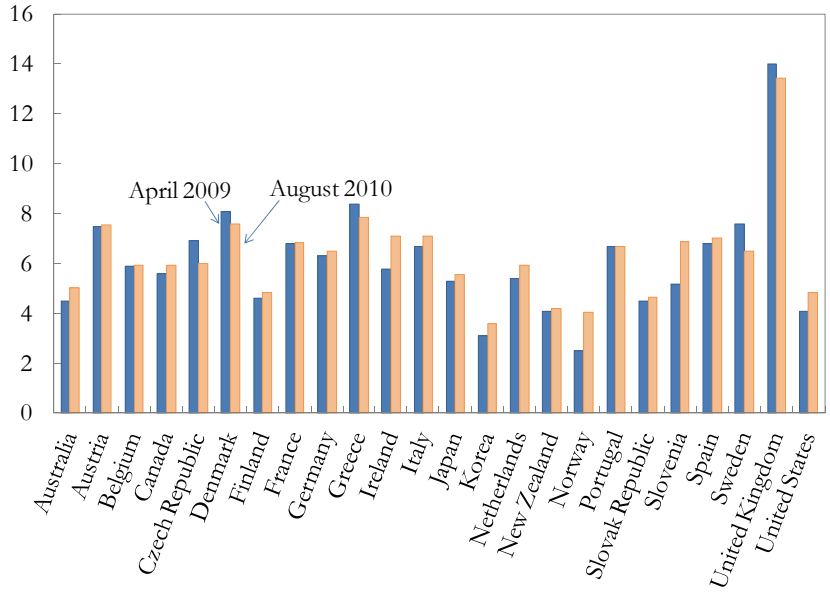



Sources: IMF staff estimates; and October 2010 WEO.

economies, the projected financing needs in 2011 are above the 2000–08 average (for example, Estonia, Latvia, and Serbia; see Figure 2.2), in several others, financing needs remain well below the last decade's average (including Brazil, Jamaica, and Turkey).

- In low-income countries, stronger policy frameworks allowed a resort to domestic financing of larger deficits without undermining macroeconomic stability. With faster projected growth in 2010–11, and with encouraging signs of continued investor interest in developing economies (as evidenced by sovereign spreads close to pre-crisis levels and successful bond issuance by some countries), access to more diversified sources of financing is also likely to be available.

**Figure 2.3. Average Maturity of Government Debt**
*(Years)*

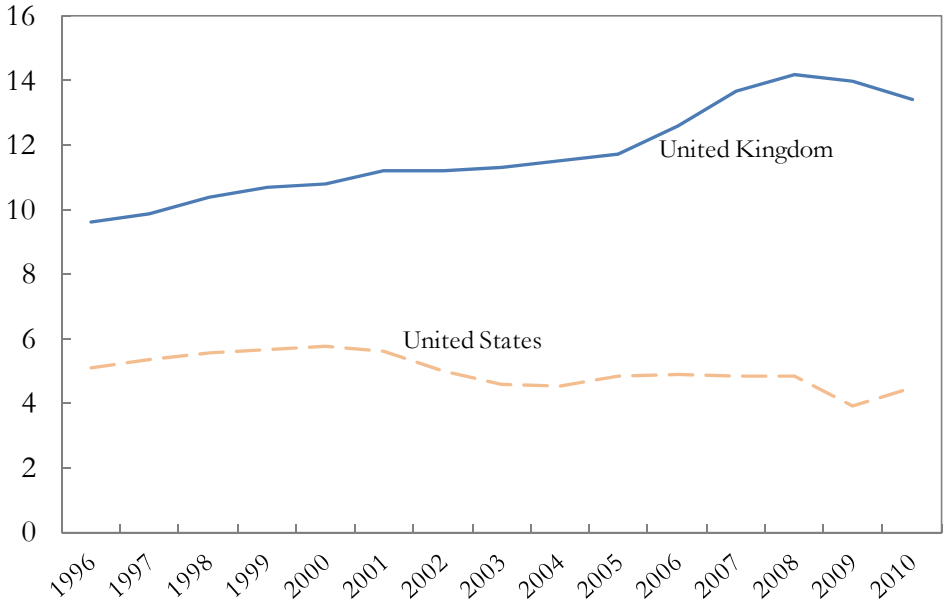



Sources: Bloomberg; and October 2010 WEO.

The decline in average government debt maturity in advanced economies observed during the early stages of the crisis has been arrested or even reversed. At the onset of the crisis when risk appetite collapsed, countries had to accommodate increased investor preference for shorter maturities.[12] However, as market conditions stabilized and investor sentiment improved, most governments were able to start extending maturities again, and the share of short-term debt in total issuance began to decline (Figure 2.3). The share of short-term debt issuance in total OECD debt issuance is projected to fall slightly in 2010 to 62½ percent from 63½ percent in 2009 (OECD, 2010). Among the largest economies, there is a striking contrast between the United States and the United Kingdom: the average maturity in the United Kingdom is more than double that in the United States, and the highest of all advanced

[12]Other factors were driving the issuance of short-term debt, as well. For example, in the United States, the fall in average maturity during 2008–09 reflects to a considerable extent the launch of the Treasury Supplementary Financing Program, which entailed short-term borrowing to assist the Federal Reserve in its operations to support the financial system.

**Figure 2.4. Average Debt Maturity: The United States and the United Kingdom, 1996–2010**
*(Years)*

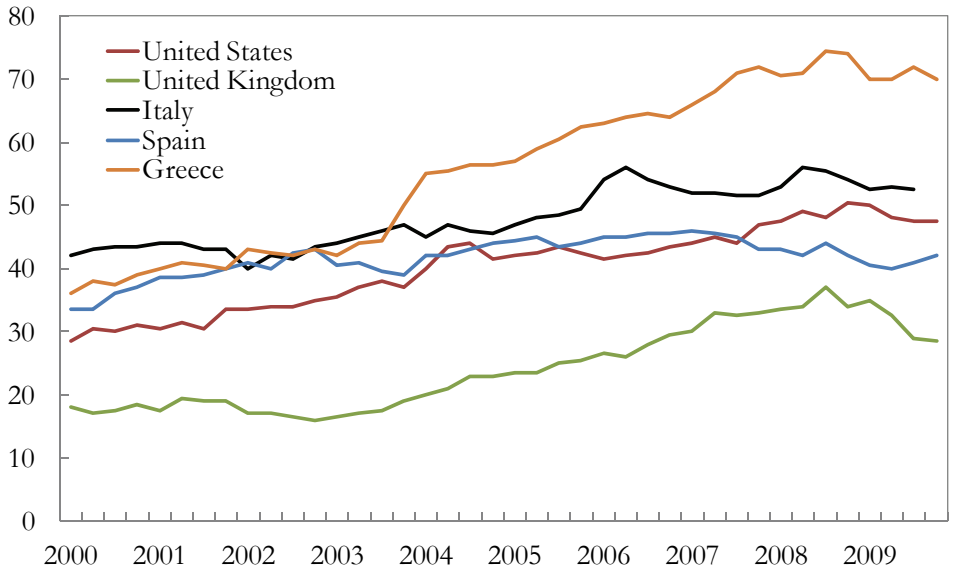



Sources: U.S. Treasury Bulletin, June 2010; HM Treasury Debt and Reserves Management Report 2010–11, March 2010; and Bloomberg.

economies. This is not a recent phenomenon, however, and reflects concerted efforts by the United Kingdom to lengthen the maturity structure dating from at least the early 1990s (Figure 2.4).

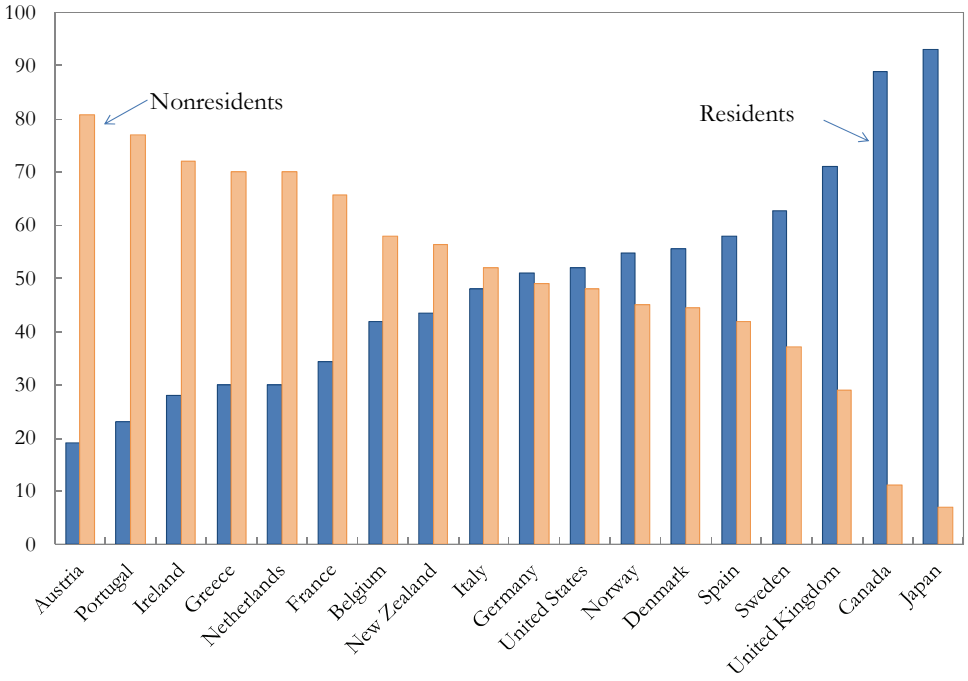
The share of nonresident holding of government debt has declined somewhat in several advanced economies during the crisis. This reversal, perhaps reflecting greater uncertainties about cross-border investments, brought to an end a decade-long trend of steadily increasing nonresident holding (Figure 2.5). Nevertheless, the share of nonresident holding of government debt continues to vary significantly across advanced economies (Figure 2.6). In part, this reflects large variations in domestic savings rates, but other factors, such as the absence of exchange rate risk for cross-country flows in the euro area, also plays a part. Japan and Canada rely almost exclusively on domestic investors to finance government borrowing, but in many other economies, nonresidents hold more than half of government debt.

## Figure 2.5. Nonresident Holding of Government Debt
*(Percent of total)*




Source: Bank for International Settlements, 2010.

## Figure 26. Government Debt Holding by Residence
*(Percent of total)*




Source: OECD, 2010.

## Government Bond Yields and Spreads: A More Polarized Market

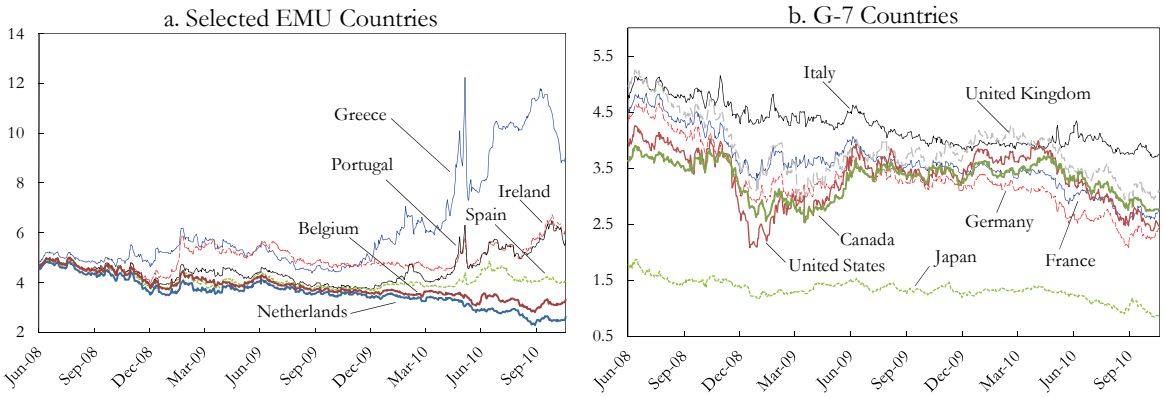
Market views on fiscal developments, as reflected in bond yields and spreads, are becoming more polarized. Yields have declined in countries regarded as safe, or at least safer, havens, while they have increased (and spreads have widened) for a few countries that are considered to be more at risk. This increased polarization does not seem to reflect changes in fiscal fundamentals, but rather a global shift in market sentiment. In the case of emerging markets, strong fundamentals, combined with search for returns, have continued to support buoyant capital inflows, leading to declines in sovereign bond yields.

Increased pessimism has affected some euro area countries. Sentiment stabilized in May–June in countries under market pressure (Greece, Ireland, Portugal) with the creation of the European Financial Stability Facility (EFSF), actions by the European Central Bank (ECB) under the Securities Markets Program (SMP), and the launch of Greece's program supported by EU-IMF financing. However, investor concerns have reemerged more recently (Figure 2.7a). This is despite the fiscal outlook in Greece and Portugal improving at a faster-than-expected rate. Indeed, some market analysis regards a credit event in some advanced countries as almost certain (Box 2.1).

In contrast, all major advanced economies have recently recorded further declines in yields (Figure 2.7b). Benchmark 10-year sovereign bond yields touched near-historic lows at end-August and remain low. The decline in yields reflects lower inflation expectations and a portfolio rebalancing toward assets perceived to be safer, in the context of uncertainty regarding the near-term prospects for recovery. In addition, continuing bank fragilities in some of the smaller advanced economies may have also played a role in heightened investor interest in safer assets. There is indeed some empirical evidence that sovereign yields and bank equity prices are negatively correlated (Figure 2.8b). This may reflect significant holdings of sovereign bonds whose prices have come under pressure in banks' balance sheets as well as the potential impact on sovereign risk of implicit guarantees provided to

## Figure 2.7. Sovereign Bond Yields in Selected EMU and G-7 Economies[1]

*(Percent)*




Source: Bloomberg.

[1]10-year benchmark sovereign yields.

banks.[13] At the same time, there appears to be some negative correlation across countries between sovereign yields and growth prospects (Figure 2.8a). This may reflect the fact that countries with better growth prospects are perceived to have lower fiscal risks (although there may be some reverse causality as lower interest rates in turn could have a beneficial impact on growth).

Other indicators of government default risk confirm increased polarization of market sentiment. Relative asset swap (RAS) spreads—which correspond to the difference between 10-year government bond yields and the fixed-rate arm of interest rate swap contracts denominated in the same currency and for the same maturity—have markedly increased in the Euro area countries under market pressure (Greece, Ireland, Portugal) since early-2010, while they are returning to pre-crisis levels in the largest economies (Figure 2.9).

[13]For a discussion of how banks' fragilities affect sovereign risk, see October 2010 GFSR Chapter 1, Section B.

### Box 2.1. Market Concerns about Advanced Economies and Default Risks

A recent IMF Staff Position Note argues that markets are currently overestimating the risk of defaults in several advanced countries (Cottarelli et al., 2010). The key findings of the analysis are as follows:

- While the need for fiscal adjustment that some advanced countries face is indeed very large, it is not unprecedented. During the past three decades, there have been 14 episodes in advanced economies and 26 in emerging economies when individual countries adjusted their structural primary balance by more than 7 percentage points of GDP.[1] Moreover, the level of the primary surplus required to stabilize debt is also not unprecedented. In several cases, the large deficits reflect wrong policy decisions taken relatively recently, which therefore could more easily be reversed. Finally, the evidence for advanced economies suggests that many countries, once they have incurred the initial pain of adjustment, persevere and go to great lengths to avoid default.
- The needed fiscal adjustment will not be much lower even with a large haircut. This is because the problem in the advanced economies today is the large primary deficit, not high interest rates and a high interest bill as was the case for the emerging markets that defaulted over the last two decades. In fact, the primary adjustment needed to stabilize the debt-to-GDP ratio would be reduced by only 0.5 percentage point of GDP on average (with a maximum of 2.7 percentage points for Greece) by applying a 50 percent haircut—an exceptionally large write-down by historical standards.
- For countries currently experiencing market pressures, marginal interest rates on government borrowing are high, but average interest rates on government debt remain relatively low. In particular, interest rates and the projected interest–growth differential in today's advanced economies are lower than for the economies that defaulted over the past two decades. Moreover, the maturity of government debt for today's advanced economies is relatively long (with Greece having the second longest maturity after the United Kingdom; Figure 2.3) and debt structures are generally more resilient to abrupt changes in market perceptions than was the case for emerging economy defaulters of the past. Thus, even the countries currently recording high spreads have considerable time to win over the markets before their total government interest bill becomes too high.
- While it is true that the current juncture is unique—given the large number of countries that have to implement fiscal adjustment—many countries in the past experienced serious market tensions and recorded high spreads but were eventually able to stabilize the situation. So current market signals should not be interpreted as pointing to an inevitable negative outcome.

The main message from the analysis is that a large fiscal adjustment is unavoidable for today's advanced economies and that a restructuring would be no substitute for—and would probably end up as a distraction from—the fiscal and structural reforms that are necessary for a durable increase in economic growth.

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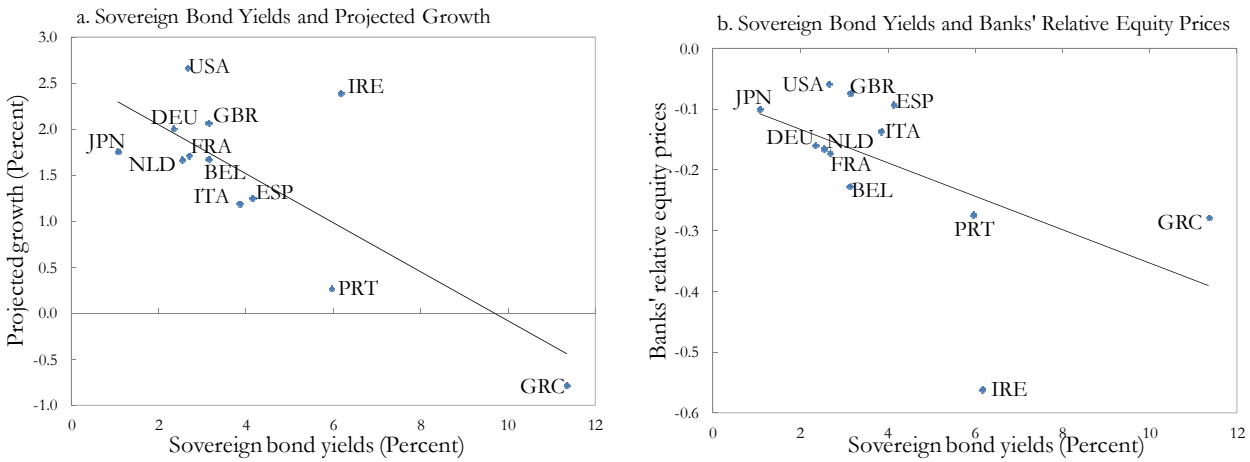
[1]Some commentators have argued that past large fiscal adjustments in advanced economies involved significant real exchange rate depreciations. The evidence on this is at best mixed. Among the 14 adjustment cases for advanced economies considered, 7 recorded an appreciation over the consolidation period; 5 recorded a depreciation; and 2 recorded a substantially unchanged real exchange rate.

## Figure 2.8. Bond Yields, Growth, and Banks' Relative Equity Prices



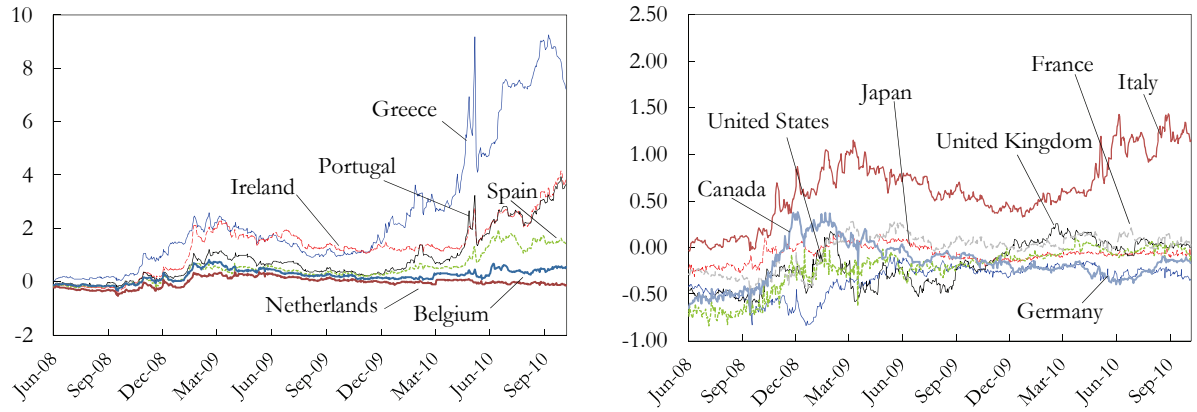

Source: October 2010 WEO.
Note: Bond yields are 10-year maturity (September 2010 average). Growth prospects are computed as the average over 2011–12 of WEO real GDP growth forecasts. Banks' relative equity prices are the percentage change from October 2009 to June 2010 of banks' stock market price indexes as a ratio of the overall stock market price index.

Similarly, sovereign credit default swap (CDS) spreads have recently touched record highs in Greece (exceeding 1100 bp in June, above the level in May, although they have recently eased), Ireland, and Portugal, while they are relatively low in the main advanced countries (see Box 2.2 on similar polarization observed in distress dependence among sovereigns).

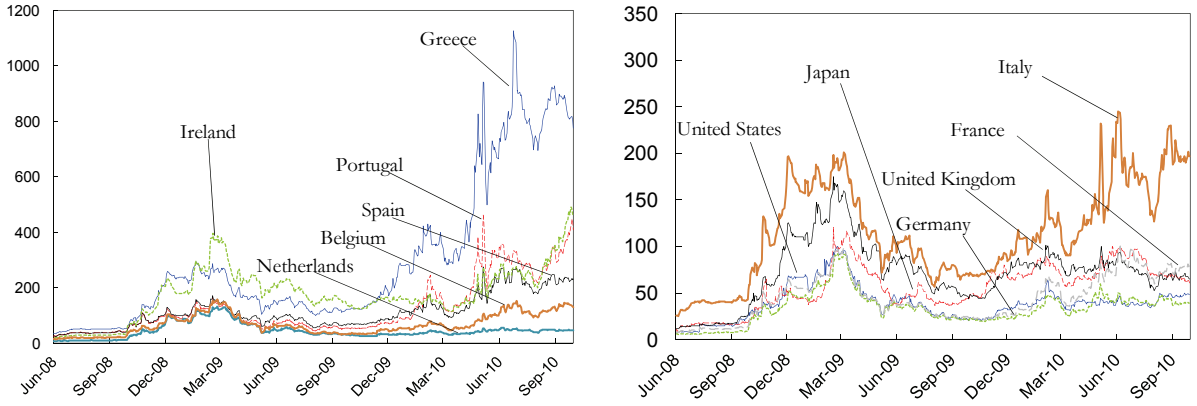
Market indicators of sovereign risk should be interpreted with caution though, as they reflect both domestic and global factors. CDS and RAS spreads are often interpreted as proxies for the probability of credit events. An analysis of the determinants of CDS and RAS spreads reveals that, although cross-country variation in spreads reflects country-specific fiscal fundamentals and other variables affecting solvency (growth prospects and banks balance sheet fragilities), global variables—such as risk aversion and global growth—have recently played an important role (Appendix 2). Furthermore, while there appears to be a robust arbitrage relationship between cash and derivatives markets in the pricing of sovereign risk, an

## Figure 2.9. Selected Advanced Economies: Relative Asset Swap and Credit Default Swap Spreads

### a. Relative Asset Swap Spreads (*Percent*)




### b.Credit Default Swap Spreads (*Basis points*)




Source: Datastream.

examination of co-movements between CDS and RAS series suggests that price signals are reliable only when markets are sufficiently liquid.[14]

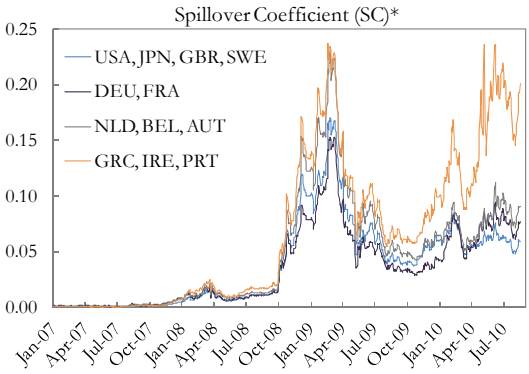
[14]The trading activity of derivatives products has been rising in countries under market pressure. The increase since January in the gross notional value of contracts written on sovereign debts has been about 5 percent of the outstanding public debt in Portugal and about 3 percent in Greece and Ireland.

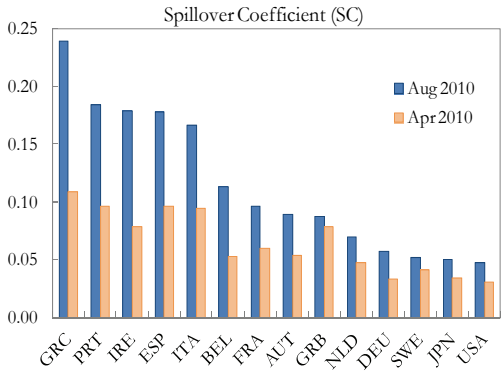
## Box 2.2. Advanced Economies: Financial Market Spillovers among Sovereigns[1]

The polarization in market sentiment and in bond yields also seems to be reflected in cross-country spillovers of financial market stress. In some cases, these spillovers reflect real linkages (e.g., trade, cross-border banking exposures). In other cases, they reflect common factors related to markets' risk appetite (e.g., increased global risk aversion). Sovereign credit default swap (CDS) spreads have shown significant polarization indicating that they might be reflecting—at least in part—these factors. To quantify the dynamics of distress dependence among different sovereigns, a measure of *market-implied contagion*—the Spillover Coefficient (SC)—is computed using the following methodology: (1) for each country, marginal probabilities of default are extracted from each individual CDS spread series at each point in time, from January 2005 to August 2010; (2) joint and conditional probabilities of default are computed using a non-parametric technique;[2] (3) the SC is computed as the weighted sum of the probability of distress of each country given distress in the other countries in the sample.

SC can be perceived as a measure of *exposure* of each of the sample countries to distress dependence or spillovers from the other countries in the sample. Based on estimates using data as of mid-August results from the SC calculations are presented in the first figure. Greece, Ireland, and Portugal exhibit high levels of stress dependence, significantly exceeding their values in early 2009, while the United States, Japan, and Germany show very low levels of stress dependence.

### Countries' Vulnerabilities to Distress Dependence



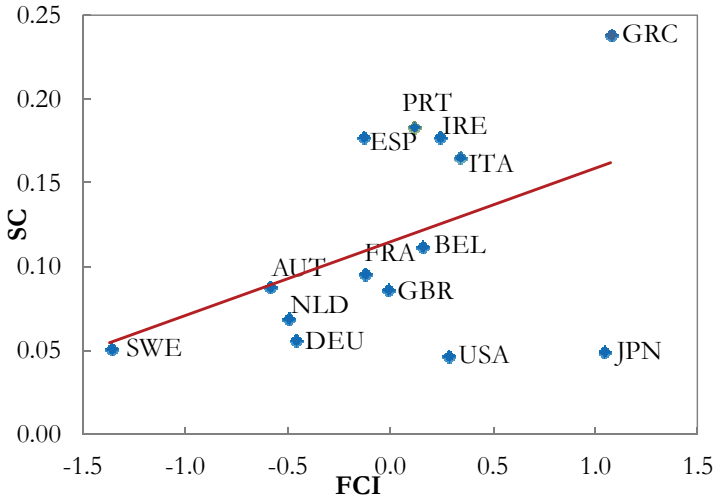




Source: IMF staff calculations.
** Simple averages.*

**Box 2.2 *(concluded)***

Although SC depends on market perceptions, an illustrative indicator of fiscal position—the Fiscal Conditions Index (FCI), which takes into account primary deficit, interest payment, and public debt levels,[3]—seems to be positively associated with high vulnerability to distress dependence (second figure).

**Distress Dependence and Fiscal Conditions (SC vs. FCI)**




Source: IMF staff calculations.

[1] This box draws on Caceres, Guzzo, and Segoviano, (2010).

[2] See Segoviano (2006a); Segoviano (2006b); and Segoviano and Goodhart (2009) for details.

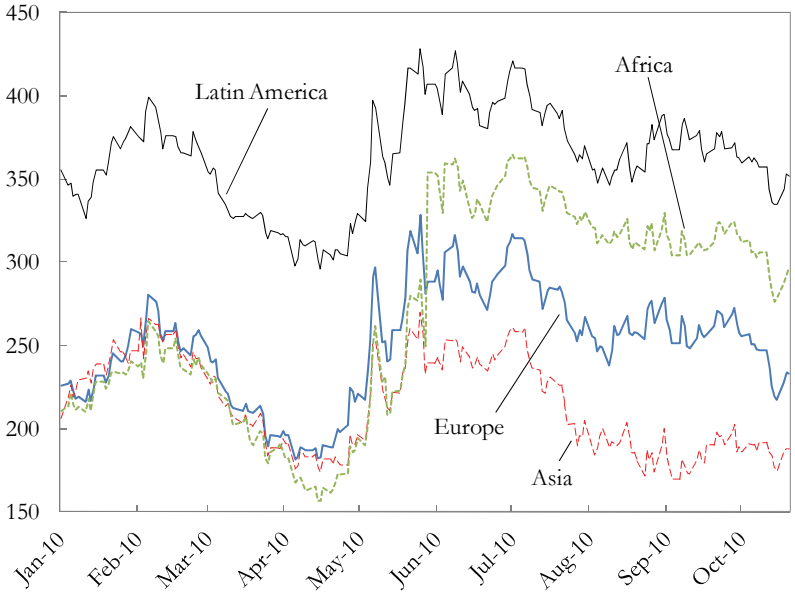
[3] For each country, FCI is obtained by taking the average of three variables in 2010—the primary deficit, interest payments, and public debt (all in percent of GDP)—relative to their average for each country over the past decade divided by their standard deviation.

Developments in Europe also seem to have favored a portfolio reallocation toward emerging markets, particularly emerging Asia.[15] After a rise following the outbreak of the Greek crisis, bond spreads for emerging markets have generally receded, though there has been some pickup again recently in European and Latin American indexes (Figure 2.10). The Latin American

[15]See October 2010 *GFSR,* Chapter 1, for a discussion on recent capital inflows to emerging markets.

**Figure 2.10. Sovereign Spreads in Emerging Markets**

***(EMBI indices; Basis points)***




Sources: Bloomberg and Datastream.

index, however, reflects an uptick in only three cases (Argentina, Ecuador, Venezuela), with others in the region showing no increase or even further declines in yields. In general, emerging markets continue to experience historically low yields and spreads, reflecting large capital inflows spurred by their relatively strong growth and fiscal positions and prospects.

CHAPTER

# 3 Fiscal Adjustment Plans and Medium-Term Fiscal Outlook

## At a Glance

*This chapter discusses the status of medium-term plans in the G-20 economies, plus six others with large adjustment needs.[16] It finds that most countries have announced medium-term fiscal targets, up to 2013. Although there are some divergences reflecting the response to market pressures, in general the announced size and speed of adjustment strike the right balance between fiscal consolidation and cyclical needs. Specific measures in adjustment plans have been identified in most instances only for 2011, leaving uncertainty on how the targets will be reached. More broadly, plans focus on expenditure cuts, which is appropriate given the high revenue ratios of most of the countries in need of fiscal adjustment. Many countries have yet to specify their longer-term fiscal policy objective, notably the level to which they intend to reverse their public debt ratio. While pension reforms have been enacted or are under way in many advanced economies, generally little has yet been specified on how to tackle long-term health care spending pressures. Many countries are considering supporting adjustment with stronger budgetary institutions, but more is needed in several countries. Among low-income countries, the medium-term fiscal outlook appears favorable, although there is some variation by region and by country group.*

[16]The six non-G-20 economies (Greece, Ireland, Latvia, Lithuania, Portugal, Spain) are among the ones with the largest adjustment needs as identified in the May 2010 *Fiscal Monitor*. The data used in this section are drawn from the authorities' publicly announced plans, as available at end-September. Cyclically adjusted balances (CABs) are computed based on authorities' projections of the output gap or, if not available, potential growth.

## Adjustment Plans: Time Frame and Commitment

Fiscal plans typically cover the period until 2013, but few countries have identified a long-term debt objective. Most economies have set out targets until 2013 for the overall balance, although a few go beyond, until 2015 (for instance, the United Kingdom and the United States). In most cases, plans envisage sizable deficit reductions.[17] However, few countries have explicitly stated the levels to which they would reduce their sharply increased debt ratios, or have indicated a clear time frame to achieve targets predating the crisis (as in the case of EU countries). This shortcoming is worrisome given the projected future spending pressures and limited fiscal room for maneuver.

There is some diversity in the type of commitment underpinning the adjustment plans, in part reflecting legal and procedural aspects. Half the countries have announced their medium-term goals in the annual budgets, and another six have used medium-term fiscal strategies (or other forms of government strategy documents). In most cases, these fiscal targets are set on a rolling basis and can be revised and adjusted from one year to the next.[18] Other countries have relied on more binding multiyear budget frameworks that commit them to a specific expenditure path over the medium term. In this respect, there is an inevitable tension between maintaining flexibility to respond to shocks and providing adequate reassurances that fiscal adjustment will proceed. One way to at least reduce this tension is to strengthen fiscal institutions, including those aimed at improving transparency and accountability (see section on Reform of Fiscal Institutions). This would enable necessary revisions with respect to initial plans to occur as a result of objective circumstances, rather than by what could be perceived as a lack of commitment to underlying fiscal adjustments.

[17]China has not published medium-term targets, while Saudi Arabia has established a medium-term target for expenditure but not the fiscal balance. Argentina, Brazil, and Indonesia do not anticipate significant medium-term consolidation given the limited impact the crisis had on their budgets.

[18]An exception is Germany, which has a legal requirement to reduce the federal structural deficit to no more than 0.35 percent of GDP by 2016 in broadly equal annual steps.

International commitments complement the national fiscal plans with a view to providing some international coordination and peer pressure. At the international level, under the Toronto Declaration of June 27, 2010, the advanced G-20 economies announced they would halve their headline deficits by 2013 (Table 3.1) and stabilize or reduce their debt ratios by 2016. The EU member states have laid out adjustment plans in their Stability and Convergence Programs, and all EU countries discussed here are under the Excessive Deficit Procedure. This entails country-specific requirements regarding the size and speed of adjustment to reduce the overall deficit to the 3 percent of GDP Maastricht criterion, between 2012 (Latvia, Lithuania, Italy) and 2014 (Ireland, Greece, the United Kingdom; FY 2014/15 for the latter). Moreover, adjustment plans by Greece and Latvia are supported by EU/IMF financing.

## Size and Speed of Adjustment: Authorities' Plans and IMF Staff Projections

The planned size and speed of underlying adjustment appear to be broadly appropriate.

- The advanced G-20 economies on average plan to improve their CAB by 1¼ percentage point annually during 2011–13 (Table 3.1), including through the unwinding of the 2009–10 stimulus.[19] This magnitude of adjustment seems to be consistent with maintaining an adequate pace of economic recovery in line with WEO projections.[20] For emerging economies, planned annual improvements in overall balances are lower (about 1 percent of GDP), reflecting mainly the currently smaller deficits. In general, the adjustment plans would strengthen the CAB from 5½ percent of GDP in 2010 (WEO estimate) to about 2½ percent of

[19]This analysis of the CAB is based on staff analysis of the headline balances included in the plans and of the potential growth rates or output gaps provided by the authorities (Table 3.2). For more details on data conventions, see IMF (2010d).

[20]The fiscal projections included in this *Monitor*—which, as noted, are consistent with the October 2010 WEO projections—envisage a slightly lower adjustment for these countries (about 1 percentage point of GDP), reflecting uncertainties on the implementation of some measures.

## Table 3.1. Advanced G-20 Economies: Projected Fiscal Balances Under the Toronto Declaration and Current National Plans

*(Percent of GDP)*

| | Overall Fiscal Balance | | | Cyclically Adjusted Balance[1] | | |
|---|---|---|---|---|---|---|
| | 2010 | 2013 | 2013 | 2010 | 2013 | 2013 |
| | WEO | Toronto Declaration | Authorities' Plans | WEO | Toronto Declaration | Authorities' Plans |
| Australia[2] | –4.6 | –2.3 | 0.3 | –4.4 | –2.4 | 0.4 |
| Canada[3] | –4.9 | –2.5 | –0.5 | –3.4 | –2.3 | –1.2 |
| France | –8.0 | –4.0 | –3.0 | –6.3 | –3.4 | –1.6 |
| Germany | –4.5 | –2.2 | –2.2 | –3.3 | –2.0 | –2.2 |
| Italy | –5.1 | –2.6 | –2.6 | –3.5 | –2.0 | –2.9 |
| Japan[4] | –9.6 | … | … | –7.6 | … | … |
| Korea[5] | 1.4 | … | 1.9 | 1.5 | … | 2.2 |
| United Kingdom[6] | –10.2 | –5.1 | –4.0 | –7.9 | –3.8 | –1.8 |
| United States[7] | –11.1 | –5.5 | –4.2 | –7.9 | –4.4 | –3.9 |
| Average (excl. Korea and Japan)[8] | –9.1 | –4.5 | –3.4 | –6.6 | –3.7 | –3.0 |

Sources: National authorities, October 2010 WEO, and IMF staff estimates. The data are for general government, unless otherwise indicated.

[1]The authorities' plans are based on headline balances. These figures have been transformed into CAB figures by applying standard elasticities to revenues and expenditure with respect to the output gap. Output gap data are based on authorities' information, where available; where unavailable, they are based on 2009 output gaps from WEO and the authorities' information on real and potential growth rates from 2010 onwards. For transforming the overall balances under the Toronto Declaration into CAB terms, the WEO projected cyclical components were applied.

[2]Target for 2013 is for federal government. The authorities also announced a target for the general government budget balance for 2012 (–0.8 percent of GDP).

[3]Authorities' plans for federal government.

[4]In the case of Japan, the Toronto Declaration acknowledged that given its specific circumstances, the commitment to halve the deficit need not apply and therefore it is not included in the average under the Toronto Declaration columns. In the Fiscal Management Strategy released June 22, 2010, Japan has set out fiscal consolidation targets as follows: 1) halving primary balance deficit relative to GDP by FY 2015 at the latest, and achieving primary balance surplus by FY2020 at the latest; and 2) achieving stable reduction in the amount of public debt relative to GDP from FY2021.

[5]WEO data are for central government, including social security fund.

[6] Fiscal year targets for 2012/13 of 5.5 percent of GDP and for 2013/14 of 3.5 percent of GDP transformed into calendar year target.

[7]Authorities' plans for federal government for FY 2013. The annual adjustment over the period 2011–16 is envisaged at about 1.5 percent of GDP.

[8]Weighted average based on 2009 PPP-GDP.

**Table 3.2. Fiscal Indicators of Crisis Impact and Planned Adjustment, 2007–13**
***(Percent of GDP)***

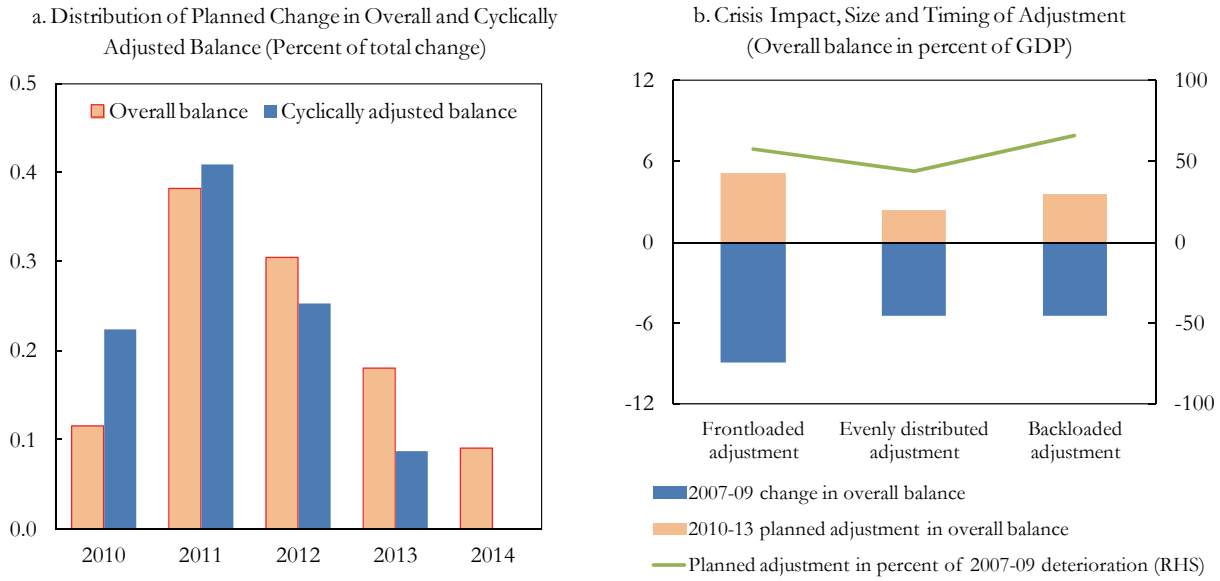
| | Authorities | | Crisis Impact (Change) | Adjustment Plan (Change) | Plan in Percent of Crisis Impact |
|---|---|---|---|---|---|
| | 2010 | 2013[1] | 2007-09 | 2010-13[1] | |
| Overall balance[2] | | | | | |
| Simple Average | –6.9 | –2.8 | –7.2 | 4.0 | 56 |
| Weighted Average | –7.8 | –3.6 | –8.9 | 4.2 | 47 |
| Public Debt[3] | | | | | |
| Simple Average | 68.5 | 73.4 | 14.9 | 4.7 | 32 |
| Weighted aAverage | 75.6 | 82.0 | 14.7 | 5.9 | 40 |
| Cyclically Adjusted Balance[2, 4] | | | | | |
| Simple Average | –5.4 | –2.4 | –4.6 | 3.0 | 64 |
| Weighted Average | –5.4 | –2.6 | –5.1 | 2.7 | 53 |

Source: IMF staff calculations based on authorities' plans for 20 adjusting countries and October 2010 WEO.
[1]2012 projection for overall balance is used for Lithuania, South Africa, and Turkey. 2011 debt projection is used for India.
[2]For Ireland, the fiscal balances do not include the most recent issuance of promissory notes to recapitalize banks.
[3]General government gross debt; for Japan, central and local government gross debt.
[4]Not available for all countries; for calculations of the authorities' planned CAB, see footnote in Figure 3.4.

GDP in 2013 (simple average, Table 3.2). This is still significantly weaker than the pre-crisis CAB. The recovery is not full—in spite of the removal of crisis-related fiscal stimulus—because of the projected loss of potential output (and related revenues) owing to the recession (see the May 2010 *Monitor*); additional revenue loss related to the asset price cycle, some underlying increases in spending for entitlements, and the rise in interest payments as debt increases.

- Many of the countries with large budget deficits stemming from the crisis tend to be the ones envisaging the largest frontloading (Figure 3.1a), with larger deficit reduction in 2011 than in the subsequent years (often following adjustments efforts already taken in 2010) (Figure 3.1b). In contrast, in the timing and speed of adjustment by the world's largest economies for which market concerns are contained, projected growth

## Figure 3.1. Planned Timing of Adjustment, 2010–13




Sources: IMF staff estimates based on authorities' plans for 20 adjusting countries and October 2010 WEO.

Notes: A frontloaded adjustment is defined as a higher adjustment in the overall balance in 2011 than in subsequent years, back-loaded if the adjustment in 2011 is less than in subsequent years. Outer years include fewer countries. For Ireland, the fiscal balances do not include the most recent issuance of promissory notes to recapitalize banks.

prospects appropriately appear to weigh heavily. In the United States, the largest adjustment is expected to come in 2012 (see Figure 3.4 for authorities' plans).[21] Adjustment in Germany is foreseen in broadly equal steps (about ½ percentage point each year in CAB), while Japan's plans translate into an adjustment of ½ percentage point for 2011, with only minor action in the ensuing years. China has also voiced a preference for a relatively gradual adjustment, although concrete medium-term plans still have to be specified.

Headline balances adjust more rapidly than in the WEO, primarily reflecting more optimistic growth assumptions, at least in the advanced economies.

[21]While data on the United States' plans reported here assume a small fiscal adjustment in 2011 (Figure 3.4), they do not yet account for the stimulus package announced in mid-September. Fully including those measures, the 2011 fiscal deficit would remain broadly unchanged (for more details, see Chapter 1).

### Table 3.3. Key Macroeconomic Assumptions Under Authorities' Plans and in the *WEO*
*(Average 2010–13)*

| | Real GDP Growth (Percent change) | | Nominal GDP Growth (Percent change) | | Interest Payments (Percent of GDP) | |
|---|---|---|---|---|---|---|
| | Authorities' plans | WEO | Authorities' plans | WEO | Authorities' plans | WEO |
| Total | 3.5 | 3.5 | 6.3 | 7.0 | 2.8 | 3.1 |
| **Advanced** | 2.4 | 2.1 | 4.6 | 4.2 | 3.7 | 3.7 |
| Low Debt | 4.2 | 3.8 | 6.7 | 6.4 | 1.4 | 1.4 |
| High Debt | 2.5 | 2.3 | 4.4 | 4.0 | 3.6 | 4.0 |
| **Emerging** | 4.8 | 5.0 | 8.4 | 10.0 | 2.2 | 2.7 |
| Low Debt | 5.4 | 5.6 | 9.2 | 10.6 | 1.2 | 1.7 |
| High Debt | 7.1 | 6.9 | 12.3 | 16.5 | 5.0 | 5.9 |

Sources: Country authorities' announcements; and October 2010 WEO.
Note: Simple averages.

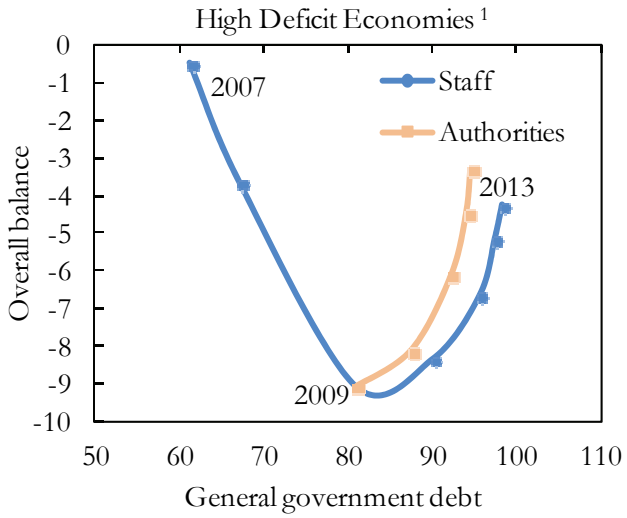
The plans, particularly in high debt advanced economies, assume faster real and nominal GDP growth, as well as lower interest payments (Table 3.3). In G-20 advanced economies, the headline balances would on average improve by about 1¾ percentage points per year, reflecting the closing of the output gap. These factors, as well as some allowance in the WEO projections for uncertainties regarding implementation, lead to a faster narrowing of deficits than under WEO projections, in particular in countries with relatively high fiscal deficits (Figure 3.2).

Over the medium term, in addition to fully implementing the current adjustment plans, sustained efforts will be needed to ensure a decline in debt ratios to prudent levels.

- Based on the WEO growth projections, in advanced economies the average public debt ratio would increase by 35 percentage points to 108 percent of GDP from 2007 to 2015, of which two-thirds will be realized by end-2010 (Statistical Appendix Table 7 and Figure 3.3). Reflecting the divergence in adjustment plans and in economic growth, the evolution of debt ratio over the medium term varies considerably: in about half the sample, the debt ratio is projected to reverse its upward trend by 2013, but in one-third it would keep rising through 2015 (Figure 3.3). For emerging economies, the debt ratio is projected on

## Figure 3.2. Authorities' Plans versus Staff Projections, Selected Economies, 2007–13

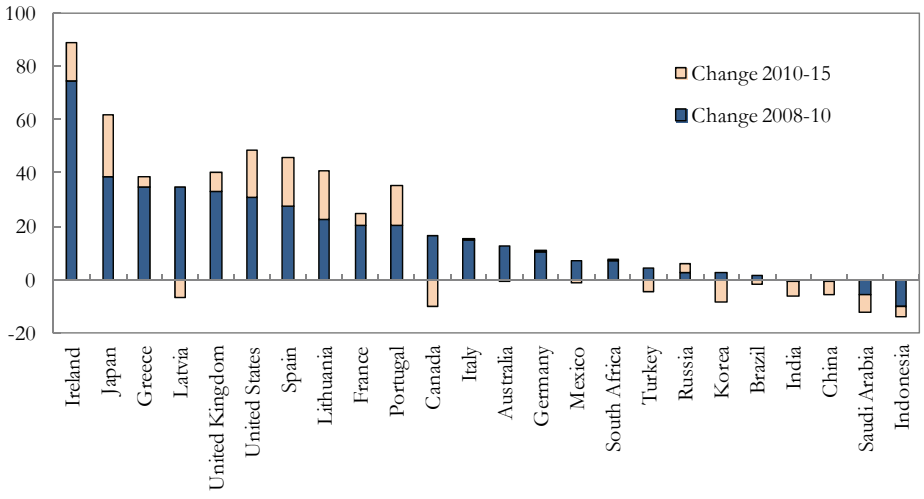
*(Overall balance and general government debt; Percent of GDP)*




Sources: IMF staff calculations based on authorities' plans; and October 2010 WEO.
Notes: Simple averages.
[1]High deficit economies are those with a general government deficit higher than 5 percent of GDP in 2009.

## Figure 3.3. Change in Public Debt Outlook, 2008–15

*(Percent of GDP)*




Source: October 2010 WEO.
Note: Net debt for Japan.

average to resume a downward trend starting in 2010, although for some in this group, the debt ratio is projected to peak one or two years later (Latvia and Mexico in 2011; South Africa in 2012; the Russian Federation in 2013).[22] Based on the authorities' plans and their macroeconomic projections, debt developments would be somewhat more benign, in particular for high deficit countries (Figure 3.2).[23]

- While current adjustment plans would start to put public debt on the right trajectory in most countries, typically the time horizon of the plans is too short to guarantee the medium-term fiscal trend that needs to be sustained, in particular by advanced economies. While this is understandable, only a few countries have committed to a concrete longer-term debt target, or have specified a path to reach targets pre-dating the crisis (as in the case of EU countries)—raising uncertainty about the ultimate goal of fiscal policy and the risk that countries may aim at stabilizing debt at high post-crisis levels.[24] As noted in the May *Monitor*, stabilizing debt at high levels would raise real interest rates and lower potential growth over the longer run (see also Kumar and Woo, 2010). Repeating the illustrative scenario in the previous *Monitor* and determining by how much advanced economies would have to adjust their CAPB between 2010 and 2020 to bring back the public gross debt ratio to 60 percent of GDP by 2030[25] indicates that an improvement of

[22]For Lithuania, IMF staff project the debt ratio to continue rising quite significantly through 2015, reflecting a large positive interest rate growth differential and primary deficits. However, authorities' plans, announced only until 2012, envisage a smaller debt increase.

[23]Of the 20 analyzed countries here, only 5 have published debt projections until 2015. Thus, Figure 3.2 focuses on comparisons until 2013.

[24]The advanced G-20 economies announced in the Toronto Declaration that they would stabilize or reduce their public debt ratios by 2016. Within this group, in national plans only the United Kingdom has announced targeting a falling public sector net debt-to-GDP ratio from 2015/16. Australia's medium-term strategy includes the goal to improve the government's net financial worth over the medium term, but without a specified target and date. However, in Australia gross and net debt are even now among the lowest in advanced countries. Among other advanced economies, Portugal has announced plans to stabilize public debt at 85 percent of GDP in 2012. Among emerging economies, India and Indonesia have announced specific debt targets.

[25]Or stabilize them at the end-2012 level, in the case of gross public debt ratios below 60 percent. Details about the features of this scenario (in which the CAPB is kept constant during 2021–30) can be found in the May *Monitor*.

8¼ percentage points of GDP would be needed (Appendix Table 1). This is ½ percentage point lower than estimated earlier since the outlook for the CAPB in 2010 has improved (mostly because of the upward revision in the level of potential output for the United States). The planned adjustment by authorities by 2013 (in terms of CAPB) would currently cover, on average, 45 percent of this requirement (Figure 3.4c).

Thus, in many countries, despite large adjustment efforts already in the pipeline, more is needed over the longer term. This reflects a combination of high debt levels, (e.g., Japan and Italy), large deficits (e.g., Ireland, Spain, the United States), and only gradual adjustment in the near term (e.g., Japan, Germany). Notable exceptions are Greece and the United Kingdom, where major short- and medium-term efforts are already under way (Figure 3.4c). While fiscal targets by Portugal and Lithuania appear also to entail much of the adjustment need, WEO projections show significantly smaller improvements in the CAPB because of the lack of specified measures in the outer years of these countries' plans.[26] For all countries, additional fiscal adjustment will be needed in the medium term because of pressures from health care and pension spending.

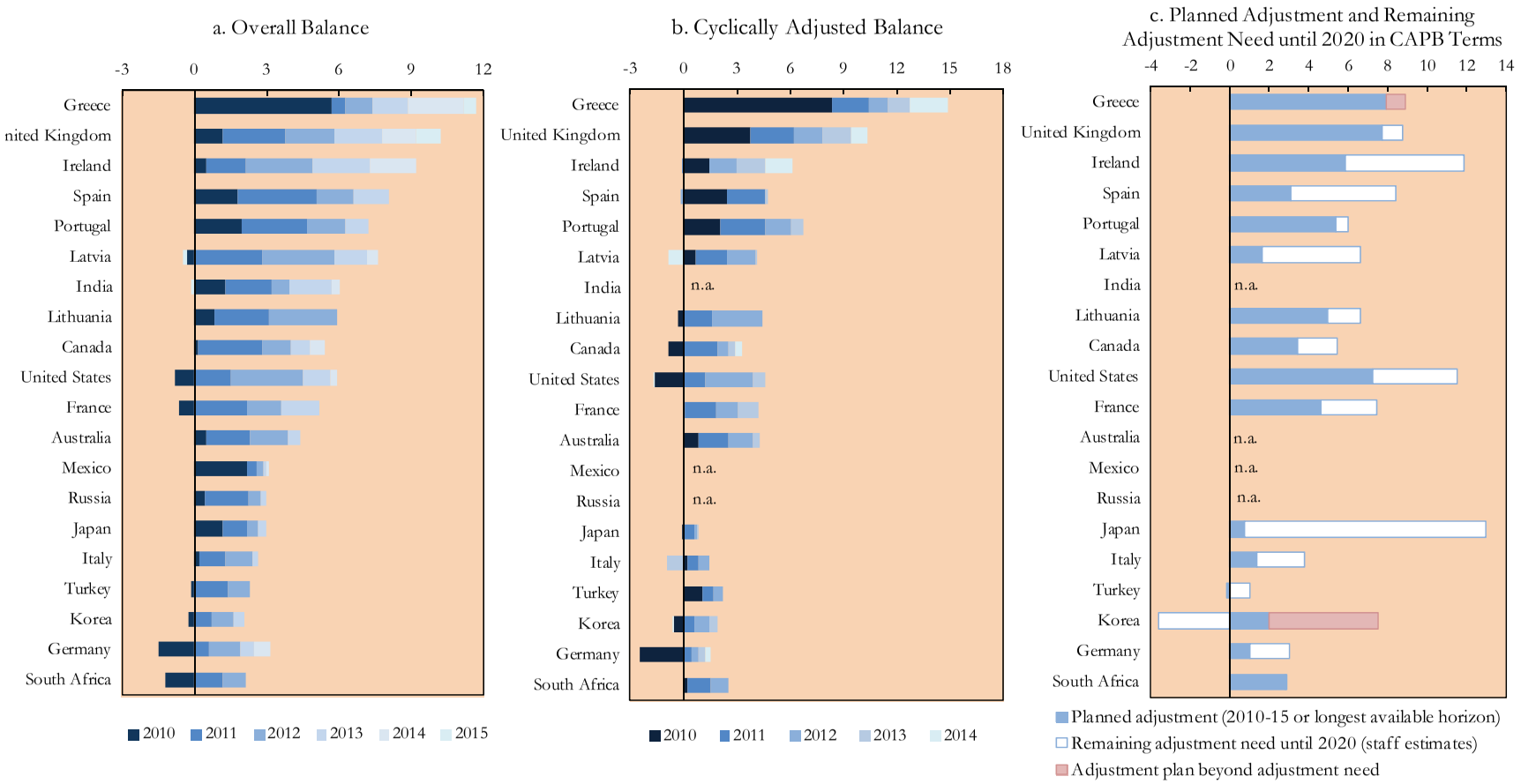
## Composition of Adjustment

In most countries, concrete adjustment measures have not yet been enacted and in many, they need to be specified in more detail. Only about half the countries have adjustment plans with detailed information on proposed measures for the initial years. But even in these cases, measures have frequently not yet been enacted or the savings or additional revenues quantified. At this stage, plans often tend to include proposals that are difficult to assess in terms of their budgetary implications and the likelihood of their implementation. Exceptions are several countries that have frontloaded their adjustment, but even for these, the level of detail

[26]For the United Kingdom, IMF staff also project a somewhat higher fiscal gap to the required adjustment than shown in Figure 3.4c, but nevertheless a significant portion would still be completed by 2015 if plans are implemented as announced.

## Figure 3.4. Authorities' Adjustment Plans and Required Adjustment until 2020

*(Authorities' planned annual changes; Percent of GDP)*




Sources: IMF staff calculations and estimates based on authorities' plans and October 2010 WEO projections.

Notes: For the United States and Ireland, the data are adjusted to exclude financial sector support recorded above the line. For the United States, data are for federal government in calendar years. For the United Kingdom, data are in fiscal years. For the Russian Federation, authorities' plans refer to the federal government. CAB based on authorities' information where available. Where unavailable, it is based on cyclical adjustment using standard elasticities and the output gap. Output gap is as estimated by authorities, or projections of the output gap (based on WEO 2009 output gaps and authorities' projections for real GDP and potential GDP growth). Panel C compares the estimated adjustment needs in CAPB terms between 2010 and 2020 to achieve debt targets in 2030 (in general, 60 percent of GDP in advanced economies 80 percent of GDP net debt for Japan) and 40 percent in emerging economies; see footnote in Appendix Table 1 for more details) and the projected change in the CAPB (based on authorities' information) between 2010 and 2015, or the latest year for which targets were announced.

diminishes as the horizon is extended. As budgets for 2011 are being finalized across countries, greater clarity should emerge regarding measures for next year. Going forward, adjustment can also be seen as an opportunity to revamp government policies and operations. For example, improving expenditure efficiency, rationalizing and streamlining the public service, raising public labor productivity, and designing more efficient tax systems can all be seen as medium-term objectives to be supported by the consolidation measures requiring sustained effort.

Fiscal consolidation plans are tilted toward expenditure cuts. The majority of plans envisage mostly expenditure-based adjustments, with the rest a roughly equal mix between expenditure and revenue measures, or largely revenue measures (Table 3.4). Countries that have announced expenditure-based adjustments tend to be characterized by a combination of large consolidation needs and limited space for additional tax increases given their already high tax-to-GDP ratios (Figure 3.5). Nonetheless, some countries, in particular those with frontloaded adjustments (Portugal, Spain, the United Kingdom), have complemented their expenditure plans with substantive revenue measures, such as VAT rate increases, since relying exclusively on spending cuts would have been challenging given the size of the adjustment.[27] China envisages budgetary improvements to come largely from the revenue side given its low tax ratio, and larger need for additional spending to widen social security coverage.

Overall, in advanced countries, expenditure is projected to remain constant in real terms in 2010–12 (Figure 3.6a), also reflecting the unwinding of the fiscal stimulus measures (of which about two-thirds were on the expenditure side). However, the primary spending ratio in 2014—when the output gap is

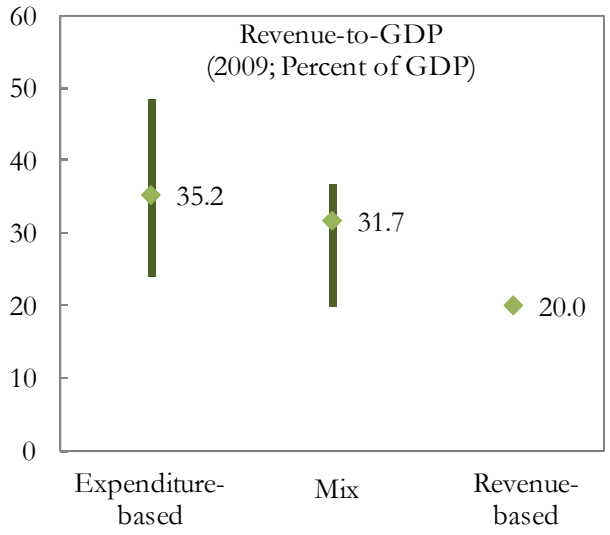
[27]Based on experience with past consolidations, there is evidence (IMF, 2010f) that expenditure-based fiscal consolidations tend to be more durable and less harmful to growth than revenue-based ones, largely because spending-based adjustments are typically accompanied by monetary stimulus. However, it is also the case that beyond a certain threshold of adjustment, relying solely on spending reduces the likelihood of success (Baldacci and Gupta, 2010). In addition, sound fiscal governance and structural reforms are important in consolidations that achieve debt targets without excessive adverse impact on growth (for example, see European Commission, 2007; Kumar, Leigh, and Plekhanov, 2007).

### Table 3.4. Planned Composition of Fiscal Adjustment

| Deficit (2009) | Largely Expenditure-based | Mix (broadly equally-based) | Largely Revenue-based |
|---|---|---|---|
| High deficit (above 10% of GDP) | Ireland<br>Japan<br>Spain<br>United Kingdom | Greece<br>India<br>United States | |
| Medium deficit (between 5 and 10% of GDP) | Portugal<br>Canada<br>France<br>Italy<br>Latvia<br>Lithuania<br>South Africa<br>Turkey | Russia | |
| Low deficit (below 5% of GDP) | Australia<br>Germany<br>Korea<br>Saudi Arabia | Mexico | China |

Sources: IMF staff estimates based on country authorities' information.
Note: Categorization is based on the entire adjustment period based on authorities' announced plans (including 2010 where applicable). Largely expenditure (revenue)-based reflects that adjustments rely on expenditure (revenue) measures in cumulative terms of more than 60 percent of total adjustment. "Broadly mixed" reflects expenditure/revenue measures of about 40-60 percent. In individual years, the composition may be different (e.g., Germany, Portugal, and Turkey have a mixed adjustment in the first years, while relying more on expenditure in the outer years).

### Figure 3.5. Adjustment Composition versus Revenue-to-GDP Ratios




Note: The figure shows the minimum, maximum, and average for each category. Revenue-based category includes only China.
Simple averages.

projected to be all but closed—will still be larger than in 2007 by 2¼ percentage points,[28] although this is mostly due to the projected decline in potential output related to the crisis.

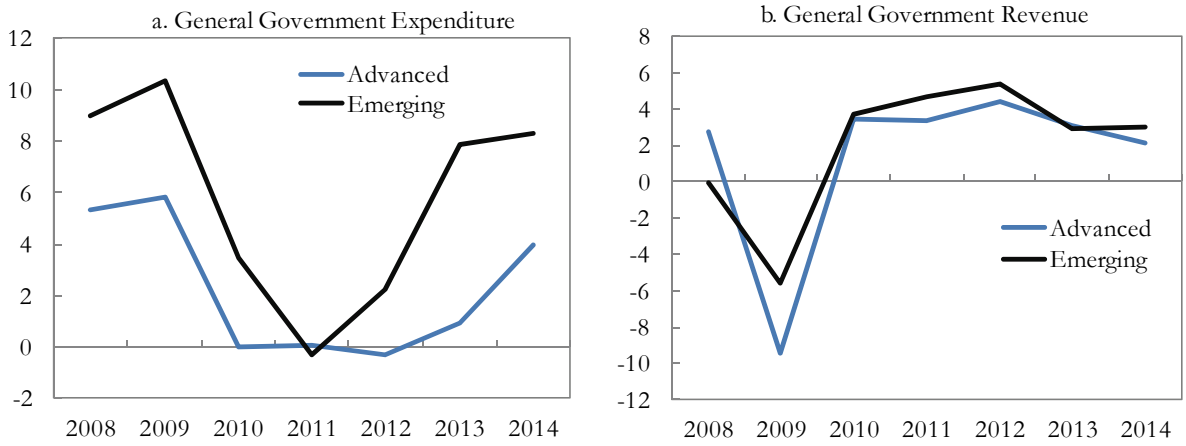
Spending cuts are more tilted toward the wage bill, size of civil service, and social transfers than public investment, which is appropriate in line with evidence on the effect of composition of spending cuts and the effectiveness of fiscal adjustment.[29] Many advanced countries have announced a public

[28]Based on October 2010 IMF staff projections for advanced economies (weighted average).

[29]See IMF (2010d) for details on the announced type of measures. Little information is available on the estimated budgetary impact, however.

**Figure 3.6. Planned General Government Real Expenditure and Revenue Growth**

***(Percentage change)***




Sources: 2008–10 are based on October 2010 WEO; 2011–14 are based on country authorities' plans.
Note: Simple average. Outer years include fewer countries.

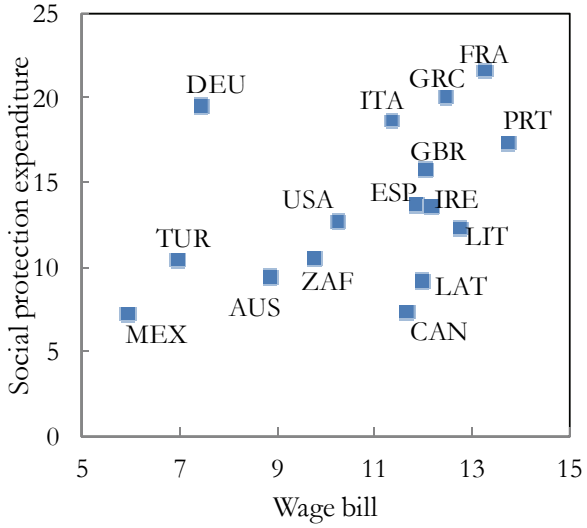
sector wage freeze or a reduction of the wage bill over time (Canada, Greece, Ireland, Italy, Latvia, Portugal, Spain, the United Kingdom). This is consistent with the comparatively high level of this spending category in those countries, surpassing 11 percent of GDP pre-crisis (Figure 3.7). Advanced economies also have a greater focus on social transfer cuts than emerging economies, reflecting the higher share of these expenditures in their budgets (e.g., in Germany, more than one-third of the announced consolidation measures is estimated to come from social spending cuts).[30] Reduction in defense spending is under consideration in Germany and the United States.[31] The United Kingdom has set out its proposals to reduce future defense spending by 8 percent from 2011–12 to 2014–15.

[30]The potential impacts that fiscal adjustment may have on income distribution as well as measures that can help limit the effect, such as more targeted expenditure, are reviewed in Appendix 3.

[31]For the United States, saving measures on defense spending in the draft budget are about 0.3 percent of GDP. Moreover, it is assumed that overall security-related spending would drop from 5¾ percent of GDP in FY2010 to 4½ percent of GDP in FY2015. For Germany, the savings from the planned military reforms are currently estimated at around 0.1 percent of GDP in 2013–14.

## Figure 3.7. Wage Bill and Social Protection Expenditure, 2008

*(Percent of GDP)*




Sources: Eurostat; and IMF staff estimates.
Note: Data are for 2008 or latest year available.

On the revenue side, measures affecting direct taxation dominate, which may raise concerns for the impact on growth. Of the announced and already implemented revenue measures, personal income tax (PIT), corporate income tax (CIT), and social security contributions (SSC) accounted for nearly half of all revenue measures, while increases in the value-added tax (VAT) (ranging from 1 to 4 percentage points in Europe) and excise taxes represent about one quarter (in terms of number of measures and not necessarily budgetary impact for which information is not available). Some countries also announced the adoption or extension of green taxes (Germany, Ireland, Korea, South Africa), as well as export taxes on commodities (the Russian Federation). To the extent that higher direct taxes discourage labor supply and investment, consolidation could weigh on growth prospects.[32] On the positive side, half of the envisaged tax measures,

[32]Myles (2009a, b) reviews the literature on the link between tax structure and economic growth and shows that higher broad-based consumption and property taxes are less harmful to growth than income taxes; and that corporate income tax can be particularly distortionary and impede long-run growth. However, in addition to tax efficiency, policy also needs to consider equity and implementation aspects of taxes.

in particular those affecting PIT and CIT, aim at widening the tax base, rather than just increasing tax rates, potentially reducing the negative impact of higher direct taxes on growth. In addition to tax policy measures, some countries (Greece, India, Italy, Korea, Latvia, Portugal, the United Kingdom) are also planning to enhance their revenue administrations to reduce tax evasion. This is important in terms of both equity and efficiency considerations, and the large existing margins to improve compliance.

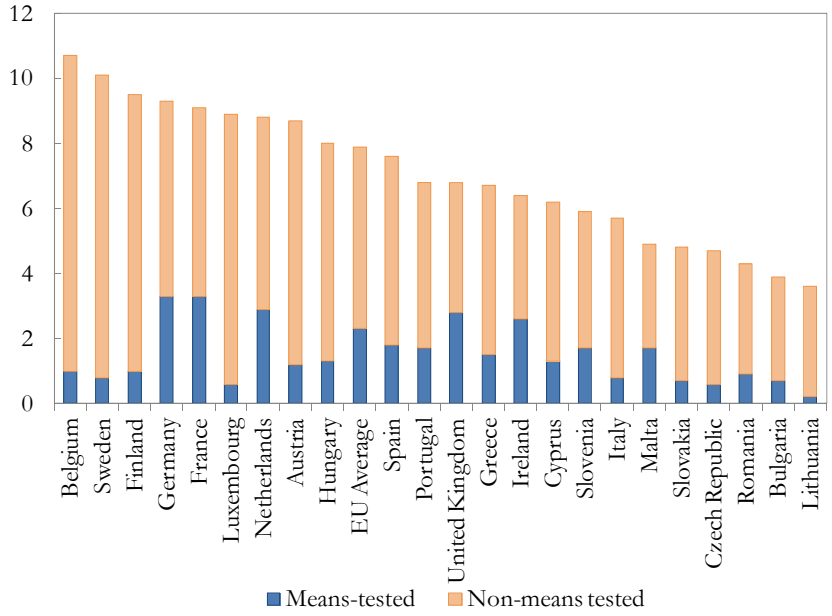
Most countries, including nearly all those with large deficits, have announced measures to protect vulnerable groups from the impact of the crisis, but these efforts have been undertaken in a piecemeal manner. None have plans to undertake a comprehensive reform of social protection networks to enhance their efficiency and effectiveness. Even in many countries that have comprehensive social protection schemes that predate the financial crisis, there is a need to improve targeting of benefits, including through enhanced means-testing, to make sure that resources reach those most in need (Figure 3.8; Appendix 3). In addition to addressing the human costs of the crisis, this will help increase the long-term sustainability of adjustment efforts.

## Medium-Term Adjustment Needs and Structural Reforms

To address medium-term fiscal gaps, entitlement reforms are critical, particularly of health care systems.

- Pension reforms have already been enacted in many advanced economies, so that pension spending in these economies is projected to rise on average by about 1 percentage point of GDP over the next two decades, compared to about 3 percentage points of GDP without such reforms.[33] Further reforms are needed, however. First, the projected spending increase remains sizable: future public pension spending increases over the next twenty years amount to 8¾ percentage points of

**Figure 3.8. The European Union: Targeting of Non-Age–Related Social Spending, 2007**
***(Percent of GDP)***




Source: Eurostat.

GDP in net present value terms. Second, spending pressure may turn out to be stronger, unless at the same time reforms are implemented to boost productivity and employment growth. The latest major reform was enacted by Greece in July 2010, including gradually raising the retirement age and cutting benefits. In France, parliament recently passed the increase of the minimum retirement age from 60 to 62 years.

- Little has been done to control the rise in health care spending in advanced economies (Box 3.1), with expenditure estimated to surge by 3½ percentage points of GDP by 2030. On the positive side, awareness of this issue is increasing and various commissions to develop options have been set up (e.g., in France, Germany, Korea).

[33]Spending would increase by an additional 0.5 percentage points between 2030 and 2050 for these economies. For an analysis on pension reform options and their macroeconomic impact, see Chapter 5. For more details on projected health care and pension increases as well as reforms undertaken in both areas, see IMF (2010b).

- Where reform discussions are already under way, plans focus on trimming the pharmaceutical bill (Greece, Ireland, Spain, the United Kingdom). Germany's reform proposals include a reversal of the reduced health care contribution rate for stimulus purposes and short-term measures to cap expenditure. The health care reform passed in the United States expands coverage, while the cost-reduction implications remain uncertain as they depend on future implementation of cost containment policies.

## Reform of Fiscal Institutions

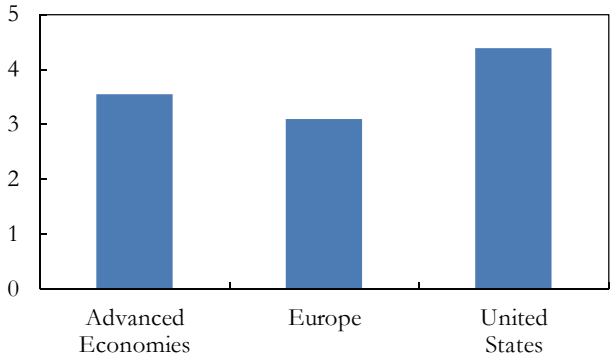
Fiscal and budget institutions are being strengthened in many countries. Germany had intended to adopt a constitutional structural budget balance rule even before the crisis, and this was implemented in June 2009. The United Kingdom has set up an Office for Budget Responsibility (OBR), and draft legislation has been presented to parliament to make the OBR permanent. The government has also established a fiscal mandate to guide the consolidation plans: to balance the cyclically adjusted current budget by the end of the rolling five-year forecast period. This mandate is supplemented by a target to place public sector net debt as a share of GDP on a downward path by 2015/16. Japan has recently announced a medium-term fiscal framework, including a pay-as-you-go rule. The United States adopted the statutory Pay-As-You-Go-Act of 2010, although some important programs were exempted, in some cases temporarily.[34] The U.S. President has also set up a bipartisan fiscal commission charged with developing options to reach primary balance by 2015. At the EU level, measures to improve the effectiveness of the EU's fiscal governance framework are making progress (Box 3.2). Countries that have come under market stress have also made reforming their fiscal institutions a cornerstone of their exit strategies. Four of the six high deficit countries plan to adopt a fiscal rule (Table 3.5), among them three that faced market concerns (Latvia, Lithuania,

[34]For other recent reforms regarding fiscal rules, see the May 2010 *Monitor*, Box 7.

## Box 3.1. Advanced Economies: The Outlook for Public Health Spending

Containing the growth of public health spending is a key fiscal challenge for many advanced economies. IMF staff project that public health spending in the European Union will rise by an average of 3 percentage points of GDP over 2011–30, under the assumption that health care costs will continue to increase in line with recent trends (Figure 1).[1] IMF staff projections also point to substantial increases in spending in other advanced countries, including the United States (4½ percentage points of GDP from 2011 to 2030). Renewed reform efforts are therefore required to contain the increase in public health spending.

Figure 1. Projected Increases in Health Spending 2011–30 (Percent of GDP)




Source: IMF staff calculations.

Recent cost-containment efforts in Europe have focused on pharmaceuticals and are unlikely to have a major effect on the long-term outlook for spending. In the United Kingdom, plans include the introduction of value-based pricing for pharmaceuticals. Germany instituted a three-year freeze on prices of pharmaceutical covered by statutory health insurance and increased the rebate that drug manufacturers are expected to pay.[2] France slashed reimbursement rates for a large number of drugs and imposed price caps on generics. Italy announced plans to centralize pharmaceutical procurement, reduce prices of generics, and introduce a tendering system for generics. Ireland cut prices of off-patent drugs and unveiled plans to introduce reference pricing and generic substitution of pharmaceuticals. Spain introduced decrees strengthening reference-value pricing and lowering prices of pharmaceuticals not included in the system of reference pricing. Greece is introducing a price-referencing system, cutting prices on certain drugs, and expanding the list of medications that are not reimbursed. These developments are projected to have positive effects in the short term, but are unlikely to have a major effect on the growth of spending over the longer term, especially given the modest share of pharmaceutical outlays in total public health outlays (about 15 percent in the OECD countries).

Despite the 2010 health care reform in the United States, public health spending is likely to continue to consume a growing share of the federal budget. Under the 2010 reform, Medicare payment cuts would be at least partly offset by the expansion of eligibility and the provision of insurance subsidies, leaving net savings from the reform highly uncertain. Supplementing Congressional Budget Office projections for federally mandated spending with estimated spending increases for subnational governments, IMF staff forecast that general government health spending will rise by 4½ percentage points of GDP over the next 20 years. There are substantial upside risks to these projections: under less optimistic assumptions on Medicare payment reductions and the cost of subsidies, health care outlays could be 1 percentage point of GDP higher in 2030, although there is the possibility that more effective therapies (e.g., gene therapy) may make a dent in the trend cost increases.

**Box 3.1** ***(concluded)***

More fundamental reforms are needed to contain the growth of spending while ensuring broad access to high quality health care. Measures will be needed to strengthen supply-side incentives or reduce the demand for public health services. Reimbursing providers using case-based payment or global budgets, rather than fee-for-service, are important supply side options for many countries. Reducing tax expenditures on private health insurance and increasing cost sharing could also be considered to rationalize demand. Past reforms—including the introduction of budget caps in a number of European countries and managed care in the United States in the 1990s—provide valuable lessons for future reforms, although the appropriate policies will be country-specific (IMF, 2010b).

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[1]In contrast, the baseline projection of the European Commission's Aging Report (European Commission, 2009) envisages an increase in public health spending of 0.7 percentage point of GDP, based on the optimistic assumption that technological progress will not contribute to rising health care costs.
[2]The recent German reform also included increases in revenues by increasing social contributions from 14.9 to 15.5 percent of wages and increasing statutory co-payments from 1 to 2 percent of income.

Greece). Greece's new Fiscal Responsibility and Management Act extends the time-horizon and scope of fiscal policymaking, introduces a top-down sequence to budget preparation, tightens expenditure controls, and increases parliamentary scrutiny of the budget. In Latvia and Lithuania, a fiscal responsibility law and a new deficit rule, respectively, are under preparation. So far, the share of countries planning new independent fiscal agencies is smaller (about 25 percent) but there is room for a considerably greater role for such institutions (Table 3.5).

However, there is considerable scope to strengthen fiscal and budget institutions further to support the consolidation process. In particular, most G-20 governments need to improve the breadth, depth, and timeliness of fiscal reporting, forecasting, and risk management to ensure that their consolidation efforts are to be based on a comprehensive, up-to-date, and robust understanding of the fiscal position. To aid consolidation planning, fiscal frameworks need to set more specific, time-bound targets for one or more broad fiscal aggregates and be supported by more comprehensive and binding medium-term budget frameworks. For example, in the United States, the president's draft budget includes detailed medium-term revenue and spending projections, with the latter clearly presenting quantified estimates of

### Box 3.2. The European Union: Reforming Fiscal Governance

Intense sovereign stress in some euro area countries triggered a formal debate on strengthening Europe's fiscal framework, under the aegis of the European Council's Task Force on Economic Governance. The crisis revealed serious flaws affecting the operation of both the preventive and corrective aspects of the Stability and Growth Pact (SGP). First, the preventive provisions of the SGP—supposed to encourage broadly balanced budgets over the cycle—have largely been ineffective. As a result, insufficient buffers were built in good times. Second, weak governance undermined both preventive surveillance and the enforcement of corrective provisions, reflecting reluctance by the EU bodies to hold member states accountable for their fiscal commitments and obligations. Third, the fiscal framework lacked crisis management and resolution capacities, a gap that has now been temporarily filled with the creation of the European Financial Stability Facility (EFSF).

Various views were expressed on the role of binding instruments and procedures effectively tying the hands of national governments. For example, the ECB suggested applying sanctions (including the loss of voting rights in European bodies) in the preventive arm of the SGP, making these sanctions quasi-automatic, and creating a politically independent fiscal agency to improve surveillance. The IMF had proposed to "shift the main responsibility for enforcement [of the excessive deficit procedure] *away* from the Council [to minimize] the risk that narrow national interests interfere with effective implementation of the common rules."(IMF, 2010c).

The Task Force in its report of October 22, 2010 made a number of recommendations to reform economic governance in the EU which were endorsed by the European Council at its end-October meeting. The main elements of the reform include the following:

- The "Excessive Deficit Procedure" can be launched regardless of the deficit when debt levels are both excessive (above 60 percent of GDP) and not declining sufficiently rapidly.
- Financial sanctions are introduced under the preventive arm of the SGP, and can be initiated by the European Commission with the possibility of a Council veto with a qualified majority; sanctions are increased under the corrective arm (ranging from non-interest bearing deposit to fines).
- Surveillance is broadened to include assessment of macroeconomic imbalances and vulnerabilities with the possibility of the Council placing a member in an "excessive imbalance position."
- The "European semester" entailing an ex-ante peer-review of budget proposals, will take effect from January 2, 2011, allowing for an assessment of budgetary measures and structural reforms.
- Recommendations for the use of independent fiscal agencies to provide analysis, assessments and forecasts on domestic fiscal policy matters to reinforce fiscal governance at the national level.
- To safeguard the financial stability of the euro area, the task force will consult on a limited Treaty change to establish a "permanent crisis mechanism" but without modifying the "no bail-out clause" of the treaty. Such a mechanism would replace the European Financial Stability Facility. Proposals will be prepared by the Council's task force by December.

Overall, the reforms tackle many weaknesses of the current governance framework but the role of the Council in some key steps in the decision-making process remains broadly unchanged. In particular, the "Excessive Deficit Procedure" and sanctions under the corrective arm can only be initiated through a decision by a qualified majority of the Council, in line with the current situation.

**Table 3.5. Number of Countries with Fiscal Rules and Fiscal Agencies or Plans for Their Adoption**

| | Fiscal Rules | | | Fiscal Agencies | | |
|---|---|---|---|---|---|---|
| | With | Without | Plans for Adoption | With | Without | Plans for Inception |
| Total | 9 | 11 | 5 | 7 | 13 | 3 |
| *Of Which:* | | | | | | |
| High Deficit Countries [1] | 5 | 6 | 4 | 3 | 8 | 2 |
| High Debt Countries [2] | 6 | 7 | 3 | 6 | 8 | 2 |
| Countries with Plans Beyond 2013 | 5 | 6 | 3 | 6 | 5 | 1 |

Source: IMF staff estimates.

[1]Overall deficit in 2009 is higher than 7 percent of GDP.

[2]Public debt-to-GDP ratio in 2009 greater than 60 percent of GDP for advanced economies (net debt for Japan) and greater than 40 percent for emerging economies.

the administration's policy priorities. However, neither 10-year projections of federal outlays of the Office of Management and Budget nor those in the Congressional budget resolution provide binding multiyear restrictions on total spending. To ensure that those plans are implemented, budget preparation and approval processes need to follow a top-down sequence. The annual budget preparation process in most G-20 countries follows some kind of notional top-down procedure but, in some countries, its impact on the final budget outcome is mitigated by widespread earmarking of revenue, fragmentation of budget decision-making, and frequent resort to supplementary budgets.

## Medium-Term Fiscal Trends in Low-Income Countries

The medium-term fiscal outlook in LICs appears favorable. Primary balances are projected to strengthen by 1¼ percentage points of GDP during the next five years, with the average public debt-to-GDP ratio gradually returning to the pre-crisis level (40 percent). On an annual basis, this implies a tightening of less than ¼ percentage point per year. This consolidation encompasses a conservatively projected increase in revenue and also accommodates continued real spending growth over the medium term to meet priority needs. About a third of the projected improvement in the primary balance is

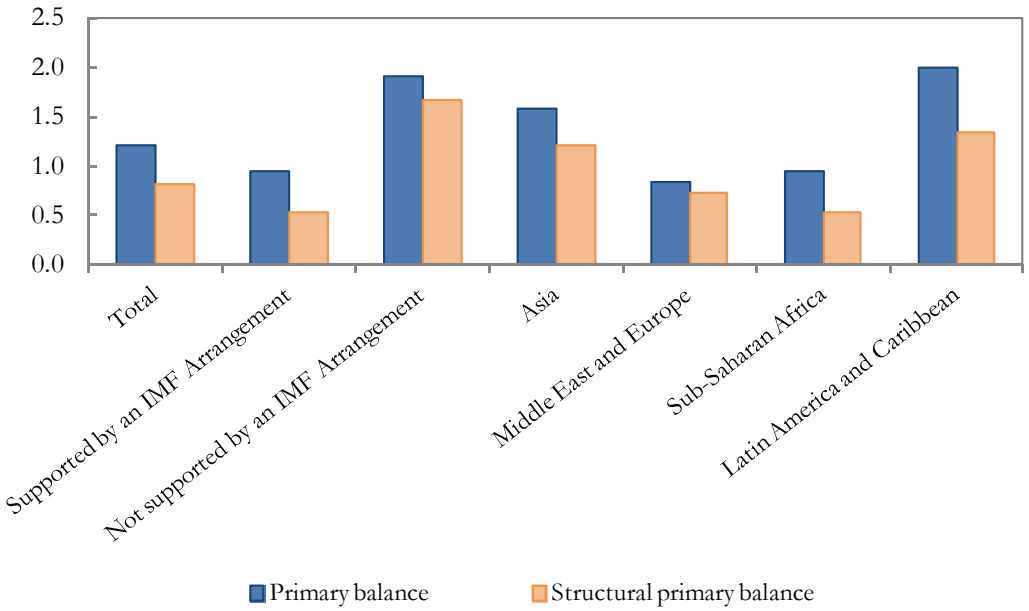
expected to come from higher revenues arising from recovery of growth. The remainder is expected to come from new revenue measures and efforts to curtail nonpriority spending. Real spending growth, with a median annual increase of about 4 percent, is expected to be somewhat slower than observed in the pre-crisis years and reflects nonrenewal of crisis-related discretionary stimulus and the need to build buffers in more vulnerable countries. In countries with less fiscal space, efforts should center on mobilizing additional revenue or donor inflows to create room to increase priority spending.

There is some variation by region and by country groups. In sub-Saharan Africa and in low-income countries where IMF-supported programs are in place, the projected fiscal improvement is somewhat lower and about half the improvement reflects cyclical factors related to the recovery (Figure 3.9). In a quarter of the countries in sub-Saharan Africa, the medium-term projections incorporate significant fiscal expansion. These two country groups have debt ratios in 2010 that are lower, on average, than the LIC-wide average. The expected improvements in structural balances are larger in other regions, especially for LICs in Latin America and the Caribbean. The fiscal adjustment for LICs in Asia, Europe, and the Middle East is less driven by cyclical improvements.

Although LICs have weathered the crisis relatively well, they are vulnerable to a range of risks, including a slowdown in global growth and cuts in donor grants. For example, if growth was lower by 2 percentage points on average over the rest of 2010 and 2011–12, fiscal revenues would be lower and deficits could be ½ percent of GDP higher on average (assuming no adjustment of spending). Under these circumstances, debt ratios would no longer be on a declining path and would be 3 percentage points higher on average in 2015 (Figure 3.10). If the lower growth shock is compounded by a reduction in grants—say, by 10 percent relative to the baseline projection or around ½ percent of GDP on average—and LICs do not offset this with spending cuts, debt ratios would begin to deviate more sharply from the baseline. Countries with more favorable debt projections could absorb the shocks and allow their deficits to widen. However, some high-debt and

**Figure 3.9. Low-Income Countries: Projected Improvement in Fiscal Balances, 2011–15**

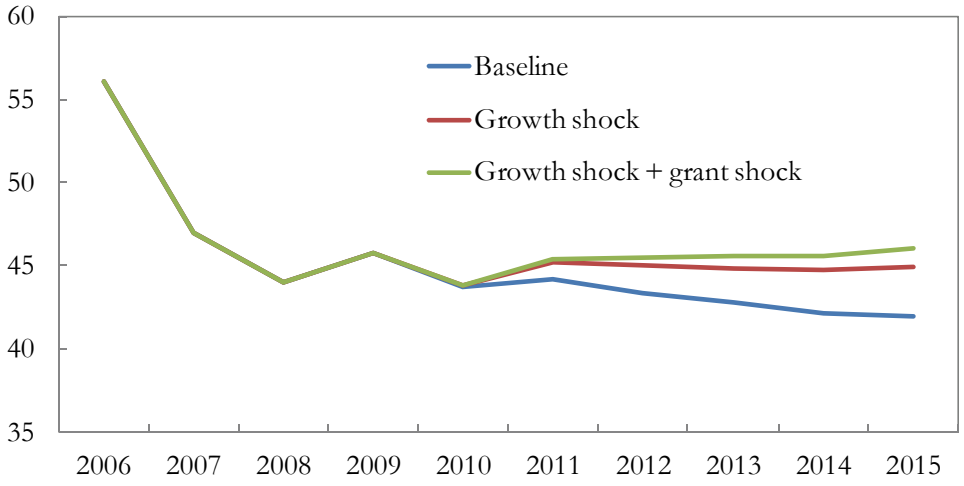
***(Median change; Percentage points of GDP)***




Source: October 2010 WEO.

**Figure 3.10. Low-Income Country Debt Paths**

***(Percent of PPP-weighted GDP)***




Source: IMF staff estimates.
Note: Weighted GDP based on 2009 PPP-GDP.

deficit LICs would need to tighten their fiscal stance to offset the impact of the shocks. Cuts in expenditure might set back progress toward meeting the Millennium Development Goals.

In light of the risks and given large infrastructure and social needs, fiscal policies in LICs should continue to aim at strengthening revenue collections. The need to address infrastructure gaps and social spending needs while rebuilding fiscal buffers makes it especially important to pursue revenue-enhancing reforms in LICs. In spite of progress made over the past decade, revenue-to-GDP ratios remain relatively low in many LICs. There is also scope to improve the efficiency of spending, including by better targeting subsidies. Of course, for countries where larger adjustment is projected, rebuilding fiscal buffers while protecting social and investment spending will be challenging without additional donor support.

CHAPTER

# 4 Assessing Fiscal Risks

## At a Glance

*This chapter assesses fiscal risks and their evolution since the May 2010* Fiscal Monitor. *It focuses on two scenarios: rollover problems, and the stabilization of public debt at post crisis levels over the medium-term. It suggests that overall the risk that these events materialize remains high for advanced economies, especially those that are already under market pressure, while risks are lower but nontrivial for emerging markets. Risks arising from macroeconomic uncertainty are generally higher than six months ago, amid concerns that the global recovery may be losing steam. Global market sentiment has improved toward emerging markets but worsened toward some advanced economies that were already under pressure.*

This chapter summarizes the assessment of fiscal risks and their evolution since the May 2010 issue of the *Monitor*, based on the earlier chapters. The discussion that follows focuses on the likelihood that two unpleasant economic outcomes materialize:

- Rollover problems, or potentially a full-blown sovereign debt crisis of regional or global relevance, which could emerge as a result of solvency concerns in the short or medium term.
- The stabilization over the medium to longer term of public debt at post-crisis levels. While this may not raise solvency concerns—as debt dynamics would be under control—persistently high debt would lead to

high interest rates, low private investment and growth, as well as limited fiscal space to conduct countercyclical fiscal policies (see May 2010 *Monitor*; Baldacci and Kumar, 2010; Kumar and Woo, 2010).[35]

## Rollover Problems

Rollover risks remain at high levels in advanced economies and, to a lesser extent, in emerging economies, but have declined in a few dimensions and worsened in others since May. The likelihood of rollover problems depends on three sets of factors: (1) the fiscal baseline (including the long-term outlook, given the forward-looking nature of solvency); (2) the distribution of fiscal outcomes around the baseline, reflecting possible negative shocks (notably macroeconomic shocks, financial sector shocks, and policy shocks, the latter referring to failure or delays in implementing certain plans); and (3) market sentiment, given the baseline and the distribution of fiscal outcomes. These factors are reviewed in turn.

### The fiscal baseline

The short- to medium-term baseline is broadly unchanged relative to May, as debt and deficits are evolving more or less along the lines envisaged in the last *Monitor*, albeit with some variations across countries. As noted in Chapter 1, this baseline is weaker among some European countries currently under market pressure although recent fiscal developments there have been favorable, with the exception of Ireland. The baseline is notably stronger among emerging economies, reflecting their much lower deficits and debt stocks and the expected further strengthening of these variables as the economic recovery there continues robustly.

Not much progress has been made in allaying long-term concerns, primarily related to the evolution of spending for pension and health

[35]Of course, a third unpleasant outcome is that fiscal policy does not provide enough support to economic activity, and recovery is not sustained. This is discussed in IMF (2010f). For an assessment of risks in low-income countries, see the last section of Chapter 3.

care.[36] The main development in this area has been the approval by Greece in July, and France in October, of a substantial pension reform, which has considerably improved the long-term fiscal baseline in those countries (although a few other countries, including the United Kingdom, have indicated an intention to introduce reforms in this area). Long-term spending pressures are generally lower among emerging markets, reflecting less adverse demographics (in most countries) and projected faster output growth.

### The distribution of fiscal outcomes around the baseline

Three kinds of shocks are considered:

- *Macroeconomic (output and interest rate) shocks*: Uncertainty on output growth has generally risen in both advanced and emerging economies since May, and stands at high levels amid concerns that the economic recovery in advanced economies may be losing steam. There is also considerable uncertainty on interest rate developments, also in light of the surge in public debt. A statistical analysis of these shocks, undertaken in Appendix 4 for selected countries, indicates that, under negative shocks, debt ratios would continue to rise rapidly. Going beyond the formal statistical analysis, as discussed in the May *Fiscal Monitor*, a possible source of positive output surprises relates to the assumption underlying the baseline fiscal projections that the crisis led to a sharp decline in potential output (and revenues)—an assumption that, while based on previous experiences after financial crises, may turn out to be wrong. This upside risk remains in the current projections but is less pronounced because, as noted in Chapter 1, since the last *Monitor*, IMF staff have already revised upward their estimate of potential output in the United States. On the other hand, a persistent downside risk relates to the pressure that high debt levels could have on interest rates. The current fiscal baseline assumes relatively benign interest rate developments, especially in Europe.

[36]An assessment of spending pressures arising from global warming will be incorporated into future issues of the *Monitor*.

- *Financial sector shocks*: Financial sector vulnerabilities are largely unchanged from May in most advanced and emerging economies, but have increased considerably among European countries currently under pressure. Vulnerabilities reflect the developments in bank balance sheets, as well as liquidity and monetary conditions. While funding conditions are still favorable and the EU bank stress test has provided some reassurance to the markets, potential losses on both private and public asset holdings weigh on the balance sheets of banks. Potential losses from sovereign risk repricing could be more relevant for banks in the European countries under pressure (IMF, 2010g). Appendix 4 includes a statistical assessment of the effect of financial sector shocks on the fiscal accounts of some countries, focusing in particular on the likelihood that guarantees on banking sector obligations are called.
- *Policy shocks*: Risks related to the quality of fiscal plans and policies have declined among advanced economies since May. As noted in Chapter 3, most countries have made progress in setting out fiscal exit plans, and a few have also made progress in strengthening fiscal institutions. Nevertheless, there is considerable room for further progress, including with respect to providing more detail on adjustment measures, identifying long-term targets for the debt ratio, ensuring the prudence of macroeconomic projections, further improving fiscal frameworks, and strengthening safety nets for the most vulnerable. Some key emerging economies have not spelled out their medium-term adjustment plans or have indicated that they do not plan to undertake significant fiscal consolidation, even where this would be appropriate to address long-standing fiscal vulnerabilities or to create space for higher-priority spending.

### Market sentiment

Market sentiment has become more polarized, weakening for some European countries, and remains a significant source of risk. Although broader market sentiment appears to have stabilized—as captured by a standard measure of market volatility, the VIX index, for instance—risk

appetite continues to be weak, as reflected in the declines in sovereign yields for countries traditionally considered safe havens. There is particularly high degree of risk aversion with regard to the European countries under market pressure, where despite the improvement in fiscal fundamentals, uncertainties about growth prospects and contingent liabilities continue to weigh heavily on market sentiment. In contrast, sentiment toward emerging economies has strengthened since May, and these countries continue to experience strong inflows from investors.

## Risks of High Long-Term Public Indebtedness

The likelihood that public debt ratios in the advanced economies will stabilize at high levels over the medium term is difficult to quantify but has likely increased. As Appendix 4 illustrates, the odds that public debt stabilizes within the next five years appear low, especially when implementation and guarantee risks are taken into account. As noted in Chapter 3, the main problem is that few governments have yet identified a return of public debt ratios to more appropriate levels within a specific time frame as a specific policy objective. Indeed, despite the initiation of fiscal consolidation in most advanced economies next year, debt ratios on average will continue to rise in most of them over the medium term. Achieving a reduction will require sustained fiscal adjustment over an extended period, and hence, involve substantial political will on the part of country authorities. If governments are unable to make these commitments before "consolidation fatigue" has set in and when debt ratios are continuing to rise, they may be even less willing to do so when debt ratios are stabilizing and voters are weary of protracted cuts in spending and increases in taxes. Moreover, few countries have undertaken measures to counter projected rising health care costs in the medium term. As the present value of these and pension spending increases are expected to vastly outweigh the cost of the economic crisis, the failure of countries to take action to address medium- and longer-term spending pressures provides another reason to fear that debt ratios will stabilize only at very high levels.

CHAPTER

# 5 Selected Spending and Tax Issues

## At a Glance

*This chapter explores four topical fiscal policy reforms that also have the potential for making a positive contribution to the strengthening of public finances without jeopardizing growth. It first shows that a pension reform based on an increase in the retirement age would have a positive impact on GDP even in the short run while helping stabilize public debt ratios in the long run. It next explores how the tax system can be used to reduce systemic financial risk, and summarizes the proposals put forward in a recent IMF report in this area. This is followed by a discussion of fiscal implications of regimes to address the environmental impact of carbon-based fuels, which shows that efficient carbon pricing could raise ¾ percent of GDP in advanced economies and 1½ percent of GDP in emerging economies within the next 10 years. The chapter concludes with an assessment of how revenues from value-added taxes can be increased to support consolidation, noting the important role that eliminating preferential rates can play in advanced economies, and that improving compliance can play in emerging economies.*

## The Effect of Pension Reforms on Growth

Different measures to reduce the pension deficit have different implications for economic growth. With the strength of the economic recovery under way still uncertain, it is important to assess the short- and medium-term impact of such measures on economic activity. This section explores the broader

macroeconomic as well as budgetary impact of pension reforms using the IMF's GIMF model.[37] It concludes that increases in the retirement age are the most effective tool. On average across regions, raising the retirement age by two years would raise GDP by almost 1 percentage point over the short to medium term and 4¼ percentage points over the long term, while reducing the debt-to-GDP ratio by 30 percentage points over the same period.

This discussion assesses three reform options relating to pay-as-you-go public pension systems.[38] They are broadly equivalent in terms of their fiscal impact, as all of them are broadly sufficient to offset the projected increase in pension spending over the long run (Chapter 3), excluding their possible effect on growth. The first option is raising the statutory retirement age by two years. This option reduces lifetime benefits paid to pensioners and encourages longer working lives with higher earned income, which may lead to a reduction in saving and an increase in consumption during working years. In addition, increased fiscal saving can have long-term positive effects on output by lowering the cost of capital and crowding in investment. The second option is reducing pension benefits by 15 percent. This option increases households' incentives to raise savings in order to avoid a sharper reduction in income and consumption in retirement. It could reduce consumption in the short to medium term, but would increase investment over the long run. The third option is increasing contribution rates by 2½ percentage points. This option leads to adverse supply side effects for labor, which—combined with a negative aggregate demand on real disposable income—depresses real activity in both the short and long term.

[37]GIMF is a non-Ricardian, dynamic stochastic general equilibrium model with properties (overlapping generations, finite horizons, and endogenous labor and capital markets) that enable it to study the implications of reforms on growth and fiscal sustainability (Kumhof and others, 2010). This version covers five regions: the United States, the euro area, Japan, emerging Asia, and remaining countries.

[38]Fiscal stability is defined narrowly as stabilizing the debt-to-GDP ratio against rising pension entitlements. Accordingly, the three options discussed are set so that pension spending (and accordingly, the debt ratio trajectory) is stabilized in the long term at the level before pension entitlement pressures started to accumulate.

### Scenario 1: Increasing the retirement age by two years, on average[39]

Broadly similar results hold across regions, albeit with some quantitative differences. In particular:

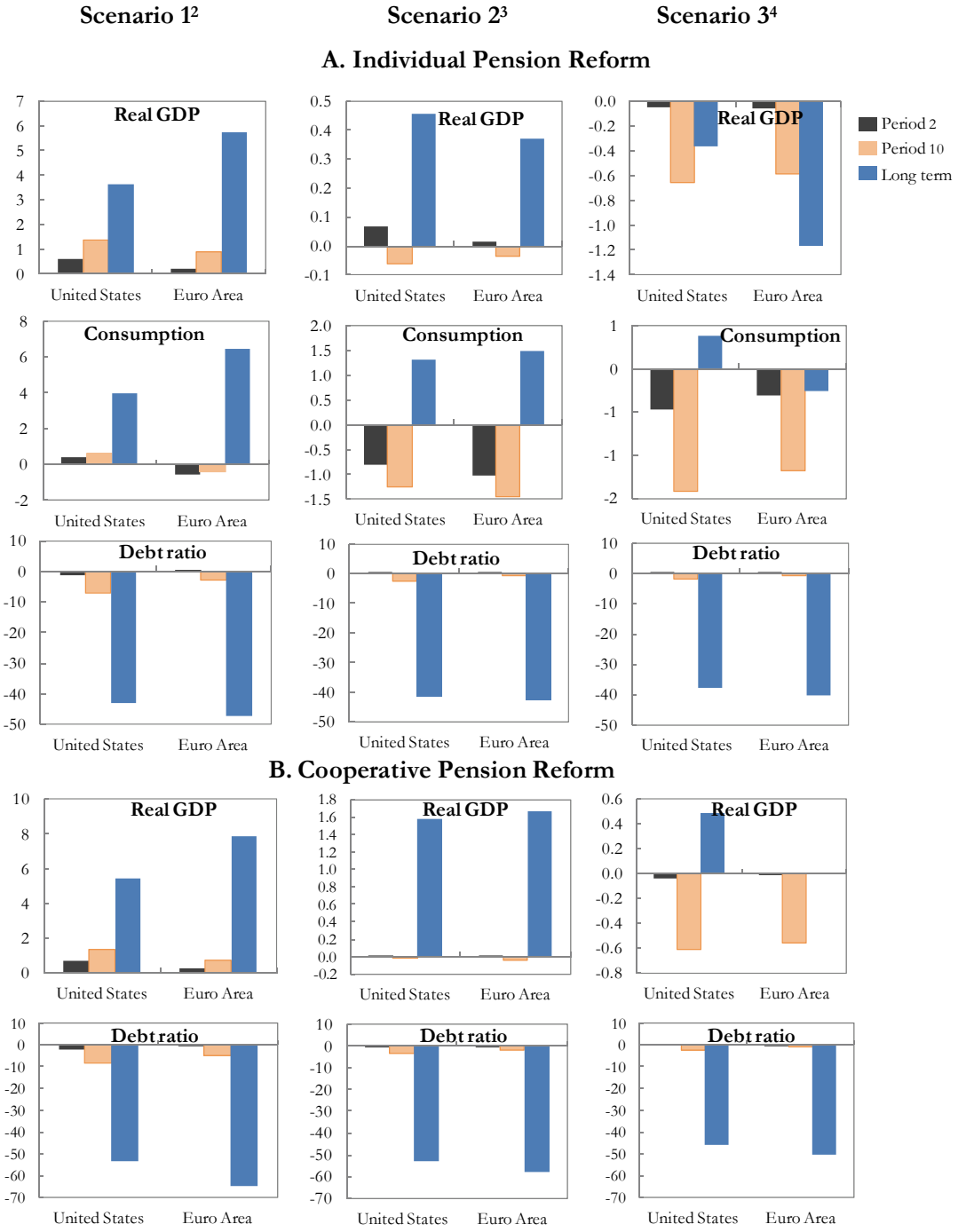
- *United States*: Real GDP rises above baseline by roughly 0.6 percentage point in period 2 and by 3¾ percentage points in the long run. This occurs because an increase in retirement age while keeping public pension spending constant boosts labor supply and labor income (Figure 5.1). Households reduce their saving and increase consumption during working years as they bring forward the effect of higher future earning incomes. Public finances improve significantly—primarily because of a reduction in public pension spending. The debt-to-GDP ratio declines by over 40 percentage points relative to baseline, in part also owing to increased tax revenue on income and consumption.

- *Euro area*: Results are qualitatively similar to the United States, but the pension age increase required to attain given budgetary saving is smaller (primarily because pensioners receive larger benefits, on average). In addition, prices are more rigid and the monetary rule is more aggressive,[40] leading to a weaker consumption profile relative to the United States in the short run. Over the long run, consumption improves by a larger amount as pension transfers are cut more aggressively in the later periods, bringing with them a larger drop in interest rates and, therefore, a lower debt level (close to 47 percentage points below baseline). Driven by higher domestic demand, real GDP rises by 5¾ percentage points above baseline.

[39]The two-year average reflects variation across regions in the increase in the retirement age needed to stabilize the debt-to-GDP ratio against rising pension entitlements.

[40]A stylized Taylor-type interest rate reaction function is adopted, where the central bank adjusts the policy rate on the basis of the deviation of inflation from its target to stabilize inflation at a prespecified target level. The rule matters in the response to offset inflationary pressures arising from a boost in domestic activity. A persistent underlying inflation process with monetary policy being tightened as a result would put downward pressure on growth. Reduced price rigidities can mitigate this effect by effectively speeding up the response of inflation and shortening the period of tighter policy. Delaying monetary policy response will also boost short-term consumption and real GDP.

## Figure 5.1. Pension Reform *(Percent deviation from baseline)*[1]




Source: Simulations of the IMF Global Integrated Monetary and Fiscal (GIMF) model.

[1]The baseline assumes that public-debt-to-GDP ratio increases in line with IMF staff's pension spending projections.

[2]Scenario 1 is an increase in statutory retirement age.

[3]Scenario 2 is a reduction in pension benefits.

[4]Scenario 3 is an increase in contributions.

- *Emerging Asia and remaining countries*: similar results hold—improvements both in output growth and public finances are notable.

### Scenario 2: Reducing pension benefit payments[41]

In the *United States*, although consumption drops by about 1 percentage point below baseline in the short run given the reduction in benefits, this is largely outweighed by the persistent benefit of lower real interest rates and better growth prospects over time; real GDP rises and settles at a higher level in the long run, almost ½ percentage point above baseline. Public finances improve with a debt ratio close to 40 percentage points below baseline. In other regions (*euro area, emerging Asia, and remaining countries*) the effects are similar. However, the spillover effects are different as they are driven by their responsiveness to movements in the world real interest rate. For instance, the spillover effects of reforms initiated by a large economic region (i.e., the United States or the euro area) on other regions' real GDP in other regions is four times the spillover effect if a smaller region (i.e., emerging Asia) undertakes reform, since a smaller region will have less of a long-term impact on world real interest rates—and, by extension, on investment and output on those regions that do not undertake reform.

### Scenario 3: Raising contribution rates[42]

An increase in the labor income tax rate results in a decline in the supply of labor, and generates a negative demand response through a decline in households' real disposable income. This leads to significant short-term losses in real GDP, about ¾ percentage point below baseline by period 10 (the United States' case). The negative effect of distortionary taxes on potential output also means significant losses in the long term. The

[41]The average reduction for advanced economies is around 15 percent, equivalent to an average reduction of 1¼ percent of GDP.

[42]The average increase for advanced economies is around 2½ percentage points or roughly 10 percent. This differs across regions depending on the savings needed to stabilize the debt-to-GDP ratio against rising pension entitlements.

consequent decrease in the world real interest rate does not play as effective a role in raising real GDP in the long term as in Scenario 2 above—real GDP remains close to 0.4 percentage point below baseline. This is also the case across the other regions.

### A cooperative strategy for reforms: magnification of benefits

Under a cooperative policy action, macroeconomic and budgetary benefits are larger in every reform case and in all regions. Under the cooperative case, an increase in the retirement age leads to a substantially greater improvement in real GDP in the United States and euro area. A cooperative action results in an interest rate decline that is significantly larger than under individual action.[43] As a result, a permanent expansion in real GDP worldwide is markedly higher than under the baseline. While all regions benefit relatively more from a cooperative action, the euro area—a large and relatively less open region—benefits relatively less than a smaller and more open emerging Asia (40 percent and 110 percent improvement, respectively). Promoting a global cooperative increase in retirement age appears to yield the largest impact on activity; the relative improvement in real GDP worldwide is 4 times larger than under reform Scenario 2 and over 10 times larger than under reform Scenario 3. Moreover, debt-to-GDP ratios decline by approximately 30 percent more in the cooperative strategy relative to a noncooperative strategy (under all types of reforms).

## Financial Sector Taxation: A Summary of the IMF Report

In 2009, the G-20 leaders asked the IMF to report on how the financial sector could make a "fair and substantial contribution toward *paying for any burden associated with g*overnment interventions to repair the banking system." The IMF was mandated to examine "options to ensure domestic financial institutions bear the burden of any extraordinary government intervention…, address excessive risk taking and promote a level playing field." The material

[43]There is a larger compounding effect on world savings under the cooperative strategy; correspondingly, world real interest rates decline significantly more than as a result of individual reform efforts.

in this section is drawn from the IMF's response, delivered at the June 2010 summit in Toronto and September 2010 conference in Paris (IMF, 2010e).

In the wake of the financial crisis, countries are reassessing the adequacy of tax policies toward the financial sector. Some G-20 countries have enacted temporary taxes on the financial sector to help pay for the costs of the recent crisis. The U.K. "Bank Payroll Tax," which expired earlier this year, levied a 50 percent tax on financial sector bonuses in excess of GBP 25,000; it is expected to have raised GBP 1.3 billion. A similar French bonus tax is projected to raise EUR 360 million. These taxes are generally not expected to have an adverse impact on financial activity, in part because the 15 basis-point Financial Crisis Responsibility (FCR) fee is less than the estimated "too big to fail" borrowing advantage of systemically important institutions.

The debate on financial sector taxation has now shifted from paying for the recent crisis to helping prevent or at least fund the cost of future crises. Several G-20 economies have already designed permanent charges to raise revenue from the financial sector as well as to alter incentives regarding leverage and compensation.

- Sweden established a financial stability fund in 2008, covering deposit-taking institutions. Initially capitalized with government transfers of 0.5 percent of GDP, the fund will receive revenues from a 3.6 basis point-levy on balance sheet liabilities.
- Italy has introduced a permanent tax on bonuses and stock options paid to managers and independent professionals in the financial sector.
- In Germany, the cabinet has approved a levy to be enforced on all banks holding a German banking license. The rate varies depending on the systemic importance of the institution (measured by its liabilities net of equity or deposits, as well as its interconnectedness with other institutions).
- The European Commission has proposed creation of a system of resolution funds with a target funding level of 2 percent to 4 percent of GDP. The

funds would be raised through a levy on the liabilities of financial institutions, possibly calibrated to systemic risk.

Large financial institutions, whose failure could threaten financial stability, may have a heightened incentive to take on excessive risk. The implicit government guarantee of their being "too big to fail" both lowers their borrowing costs (about 0.2 percent)[44] and encourages them to take on socially excessive risk. During cyclical upswings in particular, leverage and risk are increased, with little account taken of the impact on the wider financial system and the economy of the eventual downturn. The economic damage that is inflicted in the downturn or when an asset bubble collapses generally creates large deficits, which are financed by taxpayers.

To internalize this systemic risk and raise revenues to offset future financial support needs, the IMF has proposed the "Financial Stability Contribution" (FSC). This levy would impose a tax on the liabilities of financial institutions exclusive of insured deposits, insurance reserves, and Tier-1 equity capital. The tax rate could be tailored to reflect each institution's systemic risk, and vary countercyclically over the asset cycle. A 0.1 percent charge would likely raise the 2 percent to 4 percent of GDP needed to finance an adequate stability fund within 10 years. Such a change would be complementary to strengthened regulatory and supervisory tools, not a substitute for them.

Many G-20 countries already raise substantial revenue from their financial sectors through the corporate income tax (CIT). Just prior to the financial crisis, the financial sector contributed 2.3 percent of total tax revenue and 17.5 percent of CIT revenue in the average G-20 country (Table 5.1). However, since many financial institutions—particularly in advanced economies—racked up large losses during the crisis, these revenues are likely to be much lower for the next few years.

[44]This estimate is based on implied changes in government support for large financial institutions during the recent crisis.

**Table 5.1. Selected G-20 Countries: Corporate Income Tax Paid by the Financial Sector**

| Country | Period | In Percent of Corporate Taxes | In Percent of Total Tax Revenue |
|---|---|---|---|
| Argentina | 2006–08 | 6.0 | 1.0 |
| Australia | FY2007 | 15.0 | 2.8 |
| Brazil | 2006–08 | 15.4 | 1.8 |
| Canada | 2006–07 | 23.5 | 2.6 |
| France | 2006–08 | 18.0 | 1.9 |
| Italy | 2006–08 | 26.3 | 1.7 |
| Mexico[1] | 2006–08 | 11.2 | 3.1 |
| South Africa | FY2007–08 | 13.7 | 3.5 |
| Korea | 2006–08 | 17.7 | 3.0 |
| Turkey | 2006–08 | 23.6 | 2.1 |
| United Kingdom | FY2006–08 | 20.9 | 1.9 |
| United States | FY2006–07 | 18.2 | 1.9 |
| Simple Average | | 17.5 | 2.3 |

Source: IMF staff estimates based on G-20 survey.

[1] Shares of non-oil CIT revenue and total non-oil tax revenue.

Countries wanting to raise more revenue from the financial sector could consider levying a "Financial Activities Tax," or FAT. This could be structured in various ways: as an addition method value-added tax (VAT) on all compensation and profits of financial institutions; by exempting compensation and profits below a threshold level as a tax on economic rents in the financial sector; or by taxing only the higher returns, as a deterrent to excessive risk-taking. Which type of FAT is preferable depends on policymakers' objectives. An addition method VAT could be used to compensate for the undertaxation, in aggregate, of financial services under the standard VAT.[45] Its cost would partly be passed on to consumers of financial services but because it does not allow for business crediting, it would also be borne by businesses. A tax on supernormal profits (rents) in the financial sector would be less likely to be passed on to users of financial

[45]As explained in IMF (2010e), exemption results in undertaxation of the use of financial instruments by final consumers (because the value added by financial intermediaries is untaxed) but overtaxation of business use (because input tax paid by financial institutions is unrecovered). Such evidence as there is suggests that the first of these effects dominates, at least in revenue terms.

services. Financial sector value-added tax averages about 4.7 percent of GDP in G-20 countries, so a 5 percent broad-based FAT could raise about 0.2 percent of GDP, on average.[46]

International coordination would facilitate enactment of either an FSC or an FAT. Even if not all major countries chose to impose the same tax, coordination would still be useful to stem tax avoidance through cross-border shifting of income or debt, as well as to avoid double-taxation.

## Carbon Pricing: Issues in the Run Up to Cancun

Although often envisaged primarily as a corrective device aimed at mitigating greenhouse gas emissions, carbon pricing has the potential to raise substantial revenues in an efficient manner. Estimates for actual carbon pricing proposals suggest a revenue potential of between 1 percent and 2 percent of GDP, depending on the exact design (Table 5.2). Simulations suggest that establishing a carbon price that stabilizes concentrations of greenhouse gasses in the atmosphere at 550 parts per million carbon dioxide would raise between 0.7 and 2.2 percent of GDP in different regions. In the United States, the proposed Clean Energy and Security Act—a cap and trade scheme applied to electricity generating and other industries—features revenue potential of US$132 billion (0.6 percent of GDP) (CBO, 2009). Countries or regions can introduce these revenue-raising measures unilaterally, but international coordination is generally desirable. The United Nations Climate Conference in Cancun, Mexico in December 2010 offers an opportunity to take forward such coordination. In developing countries, inefficient fossil-fuel related energy subsidies still abound. Eliminating these could save another US$300 billion in public spending on a global scale.

However, raising revenue in this way is often problematic. Governments may fear a loss of competitiveness for their industries if they charge them a price on carbon emissions. In Europe's cap and trade scheme, 80 to 90 percent of

[46]Issues in designing these various terms of FAT are discussed in Keen, Krelove, and Norregaard (2010).

**Table 5.2. Revenue Potential of Carbon Pricing Policies**

***(Percent of GDP)***

| | 550 ppm Scenario[1] | Cap and Trade Scheme |
|---|---|---|
| Africa | 2.2 | … |
| China | 1.3 | … |
| India | 1.7 | … |
| Latin America | 1.1 | … |
| Australia | … | 0.9 |
| United States | 0.7 | 0.6 |
| Western Europe | 0.8 | 0.3 |

Source: Simulation results from MiniCAM model.

[1] It refers to a scenario of a global carbon price that reduces emissions so as to keep the stock of carbon at 550 ppm. The estimates refer to 2060 (see IMF *World Economic Outlook*, 2008).

the permits are distributed free of charge to industries; proposed such schemes in the United States would adopt a similar approach. Governments thus forego the bulk of the potential revenue from carbon pricing. Yet offering free permits creates windfall profits to existing firms: even those that do not produce any output can earn a profit by selling their permits. These profits can be taxed without imposing behavioral distortions. Efficiency therefore requires that governments minimize the use of grandfathering and instead auction the permits. In this way, they can realize the full revenue potential from carbon pricing.

Governments also encounter resistance to carbon pricing because of adverse income effects, especially for the poor. However, in developed countries, governments can use targeted low-cost instruments to compensate low-income groups, such as conditional transfers or tax cuts. In developing countries, the benefits of many fuel subsidies accrue mainly to higher income households. There are cheaper and more efficient means to reduce poverty than through inefficient energy subsidies. Examples are conditional transfers, and if these are not available, targeted public work programs or fee waiver programs in public schools. Thus, a comprehensive carbon pricing reform can be shaped as an element of a welfare-improving policy, with a positive contribution to the public sector budget.

Efficient carbon pricing policy would be greatly facilitated by international cooperation. Setting a price for carbon that is similar across the globe ensures that the cost of emission reduction is minimized. Moreover, coordination reduces the risk for individual countries of losing competitiveness and avoids problems of carbon leakage. The participation of developing countries in international agreements is especially important, as emissions are projected to grow in most of these countries during the coming decades. This calls for leadership by developed nations and willingness to offer transfers to enable contributions by the less developed world. The Climate Conference in Cancun in December 2010 will offer a new opportunity for such international cooperation.

## The VAT: Tapping Its Full Potential, not Only in the United States and Japan

Raising revenue through the VAT has been a key recommendation in the recent Article IV Consultations with the United States and Japan. VAT is an efficient way of raising revenues, so it is not surprising that introducing VAT in the United States and raising the low statutory VAT rate in Japan should be considered for fiscal consolidation. A VAT in the United States could increase revenues substantially. The traditional focus of such a reform has been on introducing a federal VAT to replace or reduce the scope of the federal income tax to achieve greater efficiency. However, introducing VAT alongside the income tax—rather than replacing it—would broaden the federal tax base, making it less prone to cyclical fluctuations. Moreover, retaining the progressivity of income tax would allow for a simple and efficient structure of the VAT system. In Japan, increasing the low 5 percent standard rate of VAT could make a significant contribution to fiscal consolidation. Each 1 percentage point hike in the standard rate would raise about 0.5 percent of GDP in revenue (OECD, 2008a).

However, the potential for raising revenues through the VAT goes well beyond these two countries. Many G-20 countries make extensive use of VAT exemptions and reduced rates, at a significant cost in terms of revenue collections. Yet a "pure" VAT with a single rate and minimal exemptions is

Table 5.3. Potential Gains in VAT Revenue from Increasing C-efficiency

| | Current C-efficiency (2006) | Revenue Impact (Percent GDP) of Increasing C-efficiency to 0.5 | 0.55 | 0.6 | 0.65 | 0.7 | Revenue Impact (Percent GDP) of a 1 Percentage Point Increase in the Standard Rate |
|---|---|---|---|---|---|---|---|
| Japan | 0.69 | — | — | — | — | 0.05 | 0.50 |
| China | 0.68 | — | — | — | — | 0.18 | 0.27 |
| South Africa | 0.65 | — | — | — | — | 0.56 | 0.54 |
| Korea | 0.61 | — | — | — | 0.27 | 0.62 | 0.42 |
| Indonesia | 0.52 | — | 0.21 | 0.57 | 0.93 | 1.28 | 0.43 |
| Brazil | 0.51 | — | 0.63 | 1.44 | 2.24 | 3.05 | — |
| Australia | 0.51 | — | 0.29 | 0.65 | 1.01 | 1.38 | 0.39 |
| Canada[1] | 0.50 | — | 0.21 | 0.43 | 0.66 | 0.88 | 0.58 |
| Germany | 0.50 | — | 0.73 | 1.47 | 2.20 | 2.93 | 0.37 |
| Russia | 0.48 | 0.24 | 0.83 | 1.42 | 2.01 | 2.60 | 0.31 |
| Argentina | 0.46 | 0.60 | 1.35 | 2.10 | 2.85 | 3.60 | 0.28 |
| France | 0.45 | 0.79 | 1.59 | 2.38 | 3.17 | 3.96 | 0.36 |
| United Kingdom | 0.43 | 1.08 | 1.84 | 2.61 | 3.38 | 4.15 | 0.44 |
| Italy | 0.39 | 1.74 | 2.53 | 3.32 | 4.12 | 4.91 | 0.31 |
| Turkey | 0.37 | 1.86 | 2.58 | 3.29 | 4.01 | 4.72 | 0.31 |
| Mexico | 0.33 | 2.23 | 2.86 | 3.50 | 4.14 | 4.78 | 0.24 |

Sources: IMF staff calculations based on 2006 data from OECD (Revenue Statistics Database and National Accounts Database) and WEO.
[1]Data for Canada relates to Federal Goods and Services Tax (GST).

an efficient way to raise revenues. Taxing consumption is equivalent to taxing accumulated assets and labor income: thus it falls partly on a completely inelastic base—previously existing assets—and partly on a base less internationally mobile than capital income. Broad-based consumption taxes are therefore considered less harmful to growth than income taxes.

An indication of the untapped VAT potential is provided by the level of "C-efficiency." C-efficiency is defined as VAT revenue divided by the product of the standard VAT rate and aggregate private consumption: thus for a VAT with no exemptions, a single rate, and full compliance, C-efficiency would be 100 percent. In practice, C-efficiency and performance among the G-20 countries ranges from nearly 70 percent in Japan and China

to 33 percent in Mexico (Table 5.3), reflecting the impact of exemptions, preferential tax rates and compliance problems.

Most countries could raise significant amounts of revenue by increasing VAT efficiency to the levels of the best performing countries without increasing the standard VAT rate. For example, if Italy could increase its C-efficiency to the G-20 average through a combination of streamlining exemptions, reducing rates, and improving VAT compliance, it would raise around 2.5 percent of GDP in revenues (Table 5.3). This compares to a gain of around 0.4 percent from each 1 percentage point increase in its standard rate of VAT. Mexico's relatively low C-efficiency in part reflects expensive preferential VAT rates that apply to border regions, pharmaceuticals, educational services, nonstaple food items, and new dwellings. Germany subjects around 16 percent of its VAT base to a reduced rate of 7 percent. France could unify its multiple VAT rates and broaden coverage to raise as much revenue with a headline rate significantly below the current 19.6 percent (IMF, 2007).

Concerns that increasing reliance on VAT as a revenue raiser would penalize low income households are misplaced. The argument is often made that VAT is a regressive tax because the poor consume a higher proportion of their annual income and, hence, pay a higher share of their income in VAT. However, if the incidence of VAT is measured using lifetime income, then the regressivity of VAT is not as strong.[47] Moreover, transfers to the poor can be used to address the distributional problems.

By the same token, reduced and zero VAT rates are an expensive and poorly targeted means of addressing distributional concerns. Most G-20 countries apply zero and/or reduced rates of VAT[48] to "essential" goods and services

[47]See Caspersen and Metcalf (1995). Based on the permanent income hypothesis, the consumption of individuals is based on their lifetime income, rather than annual income. Students or wealthy retirees are good examples—they are well-endowed with human or financial capital and hence enjoy high consumption, yet they appear to be poor when assessed using current income. The VAT payments of these individuals will represent a high proportion of annual income but a much lower proportion of lifetime income.

[48]For more details, see IMF (2010b).

that are consumed disproportionately by the less well off, such as fuel, housing, and basic foodstuffs. However, the degree of income redistribution that can be achieved is limited by the fact that rich individuals spend large amounts on these essentials in absolute terms. Progressive income tax and expenditure policies are better suited to providing targeted support to low-income households at a lower fiscal cost. In the United Kingdom, for example, eliminating zero- and reduced-rating, while increasing income-related benefits to protect the poor, would raise net revenue of around 0.75 percent of GDP (Crawford, Keen, and Smith, 2008).

The rationale for widespread VAT exemptions also appears increasingly outdated. G-20 countries make extensive use of VAT exemptions—in particular in the health, education, and financial services sectors, and for non-profit organizations and cultural services. Exemption of health and education is often justified as limiting the competitive disadvantage to private providers that compete with the public sector. With the private sector taking an increasing role in providing nonbasic health and education services, the rationale for their exemption is weakening. Exemption of financial services usually rests on technical difficulties in identifying value added in financial intermediation. However, this concern appears less relevant now, as Huizinga (2002) and Poddar (2003) have suggested variations on a VAT system that would allow full taxation of financial intermediation. However, difficulties would remain in levying VAT on complex forms of financial intermediation and, as discussed above, the IMF has proposed the "Financial Activities Tax" (FAT) as an alternative means to "fix" the VAT and raise revenue from the financial services sector.

VAT efficiency can be decomposed into policy and compliance gaps to prioritize VAT reforms. C-efficiency by itself is a summary measure of the degree to which a country's VAT system departs from a "pure" VAT with full compliance. To understand precisely where improvements in the VAT might be found, C-efficiency can be decomposed into a "policy gap" and a "compliance gap." A policy gap of zero indicates a VAT with a single rate and no exemptions, while a compliance gap of zero indicates full compliance with the prevailing VAT system.

## Table 5.4 Additional VAT Revenue from Policy and Administrative Improvements, 2006

| | VAT Revenue (Percent of): | | VAT Rate | C-efficiency | VAT Compliance Gap | VAT Policy Gap | Potential Extra Revenue (Percent of GDP from):[1] | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Improved Policy | | Improved Compliance[2] | |
| | Tax Revenues | GDP | | | | | Max. Improvement | Reducing Gap by Half | Max. Compliance | Reducing Gap to 15% |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 29.9 | 6.9 | 21.0 | 46 | 21 | 41 | 4.9 | 2.3 | 1.9 | 0.5 |
| Mexico | 20.4 | 3.7 | 15.0 | 33 | 18 | 60 | 5.6 | 2.8 | 0.8 | 0.1 |
| Hungary | 30.5 | 7.4 | 20.0 | 49 | 23 | 37 | 4.3 | 2.2 | 2.2 | 0.8 |
| Latvia | 39.1 | 8.3 | 21.0 | 49 | 22 | 38 | 5.1 | 2.5 | 2.3 | 0.7 |
| Lithuania | 36.1 | 7.5 | 18.0 | 50 | 22 | 36 | 4.3 | 2.1 | 2.1 | 0.7 |
| Brazil | 30.7 | 7.3 | 17.5 | 52 | n/a | … | 3.8 | 1.9 | 2.0 | 0.6 |
| Indonesia | 30.1 | 3.7 | 10.0 | 52 | n/a | … | 1.9 | 1.0 | 1.0 | 0.3 |
| China | 36.7 | 6.0 | 17.0 | 68 | n/a | … | 1.0 | 0.5 | 1.6 | 0.5 |
| South Africa | 28.2 | 7.4 | 14.0 | 65 | n/a | … | 1.6 | 0.8 | 2.0 | 0.6 |
| Bulgaria | 39.5 | 11.8 | 20.0 | 68 | n/a | … | 1.9 | 1.0 | 3.2 | 0.9 |
| Romania | 28.6 | 8.1 | 19.0 | 50 | n/a | … | 4.8 | 2.4 | 2.2 | 0.6 |
| Russian Federation | 11.0 | 5.6 | 18.0 | 48 | n/a | … | 3.7 | 1.8 | 1.5 | 0.4 |
| Turkey | 29.3 | 5.5 | 18.0 | 37 | n/a | … | 6.3 | 3.2 | 1.5 | 0.4 |
| Average | 29.1 | 7.1 | 18.6 | 50 | 21 | 43 | 3.8 | 1.9 | 1.8 | 0.5 |
| **Advanced Economies** | | | | | | | Max. Improvement | Reducing Gap by Half | Max. Compliance | Reducing Gap to 7% |
| France | 25.9 | 7.1 | 19.6 | 45 | 7 | 52 | 7.5 | 3.8 | 0.5 | 0.0 |
| Germany | 27.1 | 6.2 | 16.0 | 50 | 10 | 44 | 4.9 | 2.4 | 0.7 | 0.2 |
| Italy | 21.0 | 6.1 | 20.0 | 39 | 22 | 50 | 6.2 | 3.1 | 1.7 | 1.2 |
| United Kingdom | 21.7 | 6.5 | 17.5 | 43 | 13 | 50 | 6.5 | 3.3 | 1.0 | 0.5 |
| Australia | 12.9 | 3.8 | 10.0 | 51 | n/a | … | 2.6 | 1.3 | 0.6 | 0.1 |
| Japan | 14.2 | 2.6 | 5.0 | 69 | n/a | … | 0.7 | 0.3 | 0.4 | 0.1 |
| Korea | 20.9 | 4.2 | 10.0 | 61 | n/a | … | 1.8 | 0.9 | 0.6 | 0.1 |
| Canada | 9.2 | 3.1 | 5.0 | 50 | n/a | … | 1.4 | 0.7 | 0.3 | 0.1 |
| Average | 19.1 | 4.9 | 12.9 | 51 | 13 | 49 | 3.9 | 2.0 | 0.7 | 0.3 |

Sources: WEO; GFS; and IMF staff estimates.[3]

[1]For countries where no VAT gap estimate is available, the average (21 percent for emerging economies and 13 percent for advanced economies) of those available has been used.

[2]Improving VAT compliance is likely to have an indirect positive effect on income tax compliance which is not reflected in these figures.

[3]This report has been produced by Reckon LLP following a study commissioned by the European Commission, Directorate-General for Taxation and Customs Union. For further information, see press release by the EU: *Fight Against Tax Fraud: Commission Publishes a Study on the VAT Gap in the EU* (Brussels, October 30, 2009).

With some exceptions, VAT reform should concentrate on closing the policy gap in advanced economies, while emerging countries should focus on cutting compliance gaps. A decomposition of the VAT gap between the policy and compliance gaps suggests that C-efficiencies are broadly comparable between emerging and advanced economies, but that the underlying causes of VAT gaps differ (Table 5.4). Advanced economies appear to enjoy higher rates of compliance but with VAT systems that make greater use of exemptions and zero rates. For example, a small compliance gap of only 7 percent makes France a natural benchmark for other countries to emulate. Achieving this benchmark would raise three times as much revenue for emerging countries as for advanced countries, on average.

APPENDIX

# 1 Interest Rate-Growth Differential

Debt dynamics depend crucially on the interest rate-growth differential. Other things given, the larger the differential (hereafter, *r–g*, or the differential), the larger the increase in the primary balance required to stabilize a given debt ratio.[49] Thus, *r–g* plays a key role in determining an appropriate strategy to achieve a given debt target. Conversely, the debt ratio that can be sustained by the (perceived) largest feasible primary balance is inversely related to the differential.[50]

A large depreciation of local currency can sharply raise the effective interest rate paid on debt by increasing the local currency value of foreign currency debt and its servicing cost. The computation of *r* is typically based on interest paid in year *t* as a ratio to debt outstanding at end of year *t*–1. If a portion of debt is denominated in foreign currency, *r* should include a term that

[49]Debt dynamics can be expressed as

$$\Delta d_t = \left(\frac{i-\gamma}{1+\gamma}\right) d_{t-1} - p_t,$$

where $d_t$ is the debt to GDP ratio at the end of period $t$; $pt$ is primary balance as a share of GDP during $t$; $i$ is nominal interest rate; $\gamma$ is nominal GDP growth rate. Precisely, the interest rate-growth differential ($r–g$) refers to $\left(\frac{i-\gamma}{1+\gamma}\right)$. It is equivalent to $\left(\frac{r-g}{1+g}\right)$, where $r$ is real interest rate and $g$ is real GDP growth rate. See Escolano (2010) for details.

[50]Related, the *r–g* is at the heart of the debate on dynamic efficiency in analyses of growth. To achieve the dynamic efficiency where an economy invests less than the return to capital, the interest rate (marginal product of capital) must exceed the growth rate over the long term (i.e., *r–g* is positive), known as the "modified golden rule" (Blanchard and Fischer, 1987). This "rule" holds broadly in most advanced economies over long periods.

captures valuation changes owing to exchange rate movements (see footnote 1 in Table A1.1). While this is not a major consideration for advanced economies (since the bulk of their debts are denominated in domestic currency), it can be important for emerging economies where the share of foreign currency debt is significantly large.[51]

There is substantial variation in the differential across advanced and emerging economies and within these economy groups over time. In the United States, for example, it ranged between –2.3 percent and 6.5 percent (Table A1.1; Figure A1.1). Given the broadly secular decline in interest rates, the movements in the differential appear to follow those in nominal GDP growth closely (albeit in the opposite direction), with a sharp rise during recessions (Figure A1.2). Similar patterns are found in other advanced economies such as Japan and Italy. The differential averaged around 1.6 percentage points in the advanced economy group over the long period of 1981–2008. By contrast, the differential is often negative for many emerging economies (–10 percentage points on average in 1994–2008). The rank correlation of average differentials of each country within a country group confirms the significant variation across countries and time periods (Table A1.2). For the advanced economies, standard test statistics cannot reject the null hypothesis that decadal averages of $r–g$ in 1981–90 and those in 2001–08 are independent. A similar result holds for emerging economies.

Large public debt is associated with high interest-growth differential. High public debt can adversely affect capital accumulation and growth via higher long-term interest rates, higher future distortionary taxation, inflation, and greater uncertainty and vulnerability to crises;[52] large debts and also fiscal deficits raise long-term interest rates (Baldacci and Kumar, 2010). Consistent with this view, the "differential" is positively correlated with the level of public debt (Table A1.3): the larger the public

[51]During the year of the crisis, it typically rises very sharply to a large positive number, reflecting factors such as capital loss due to sharp depreciation of domestic currency and decline in growth rate (Cottarelli et al., 2010).

[52]There are, however, a number of nonlinearities with debt over 90 percent of GDP having a particularly significant adverse impact on growth (Kumar and Woo, 2010; and Rogoff and Reinhart, 2010).

## Table A1.1. Selected Countries and Country Groups: Interest Rate-Growth Differential[1]

### *(Percent)*

| Country | 1981–90 | 1991–2000 | 2001–08 | 1991–2008 | 1981–2008 |
|---|---|---|---|---|---|
| Advanced Economies | | | | | |
| Austria | 1.2 | 1.4 | 1.1 | 1.3 | 1.2 |
| Canada | 6.3 | 5.0 | 1.7 | 3.5 | 4.4 |
| France | n.a. | 3.7 | 0.6 | 2.3 | n.a. |
| Germany | n.a. | 3.8 | 2.2 | 2.9 | 2.9 |
| Greece | -4.6 | -0.5 | -1.9 | -1.1 | -1.6 |
| Japan | 0.2 | 2.6 | 1.6 | 2.1 | 1.4 |
| Korea | n.a. | -0.2 | 0.3 | 0.1 | n.a. |
| Netherlands | 5.3 | 2.0 | 0.7 | 1.4 | 2.8 |
| Norway | 1.8 | -0.3 | -3.7 | -1.8 | -0.7 |
| Spain | n.a. | 1.4 | -2.4 | -0.3 | n.a. |
| Sweden | n.a. | 2.5 | -0.4 | 1.0 | n.a. |
| United Kingdom | 1.5 | 2.7 | 0.4 | 1.7 | 1.6 |
| United States | 1.9 | 1.4 | 0.3 | 0.9 | 1.3 |
| Emerging Economies[2] | | | | | |
| Chile | n.a. | 4.2 | -1.0 | 0.4 | n.a. |
| Hungary | n.a. | -6.8 | -1.9 | -4.6 | n.a. |
| Mexico | n.a. | -1.5 | -0.7 | -1.2 | n.a. |
| Poland | n.a. | -12.6 | -1.6 | -7.1 | n.a. |
| Turkey | n.a. | n.a. | 2.5 | n.a. | n.a. |
| Thailand | n.a. | -3.6 | -7.4 | -7.0 | n.a. |
| Groups of Countries[3] | | | | | |
| G-7 | 1.7 | 3.3 | 1.2 | 2.3 | 2.2 |
| Advanced G-20 | 2.7 | 3.1 | 0.8 | 2.1 | 2.3 |
| Advanced Economies | 1.0 | 2.0 | -0.3 | 0.9 | 1.6 |
| Emerging G-20 | n.a. | -9.0 | -8.9 | -10.3 | n.a. |
| Emerging Economies | n.a. | -5.0 | -9.4 | -10.0 | n.a. |

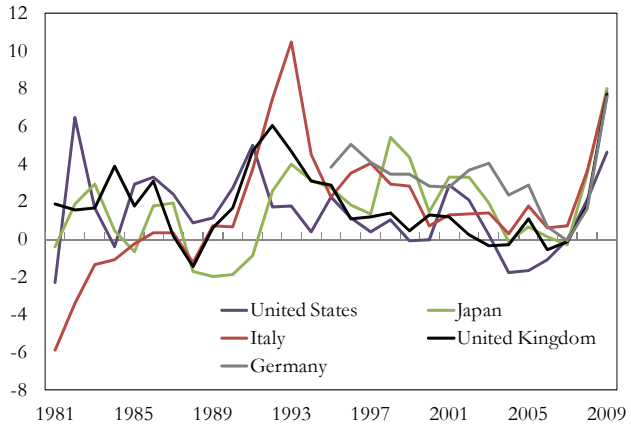
Sources: IMF staff estimates based on data from the April 2010 WEO and data on foreign currency debt from OECD, FAD, and ONS (UK).

[1]In case a portion of debt is denominated in foreign currency, the interest rate-growth differential becomes $[(\varrho - \gamma)/(1+\gamma)]$ where $\varrho = (1-\alpha)\varepsilon + i$; $\alpha$ is the share of domestic currency debt in total debt outstanding at $t-1$; $\varepsilon$ is the rate of nominal depreciation of domestic currency against foreign currency during $t$; and $i$ is the average interest cost of servicing debt during $t$. The interest rate-growth differential presented in the table corresponds to $[(\varrho - \gamma)/(1+\gamma)]$, except for Greece and Portugal where $[(i-\gamma)/(1+\gamma)]$ is reported because of lack of data on foreign currency-denominated debt.

[2]For emerging economies, data are available from 1994 at the earliest.

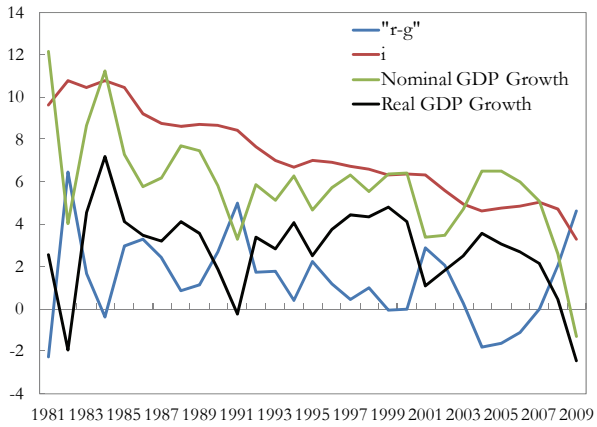
[3]Simple averages.

**Figure A1.1. Selected Advanced Economies: Historical Movements of *r-g***
***(Percent)***




Source: IMF staff estimates.

**Figure A1.2. United States: Interest Rate-Growth Differential and Its Components**
***(Percent)***




Source: IMF staff estimates.

**Table A1.2. Rank Correlation Coefficients of Decadal Average Differential within Groups**

| Country Group | Correlation between 1981–2000 and 1991–2000 | Correlation between 1991–2000 and 2001–08 | Correlation between 1981–1990 and 2001–08 |
|---|---|---|---|
| Advanced Economies | 0.49 (0.06) | 0.58 (0.00) | 0.22 (0.43) |
| Emerging Economies | n.a. | 0.3 (0.37) | n.a |

Source: IMF staff estimates.
Notes: Spearman rank correlation is presented. The numbers in parentheses are p-values. The null hypothesis is that the decadal averages of the *r-g* are independent.

**Table A1.3. Advanced Economies: Public Debt to GDP Ratio and Interest Rate-Growth Differential, 1981–2008**
***(Percentage points)***

| Interest Rate-Growth Differential ($r–g$) Average | Public Debt-to-GDP | | | |
|---|---|---|---|---|
| | Less than 30 | 30–60 | 60–90 | Above 90 |
| Based on annual observations of $r–g$ | –0.07 | 0.61 | 1.44 | 3.20 |
| Based on average of $r–g$ in subsequent 3 years | 1.06 | 0.73 | 0.94 | 2.91 |

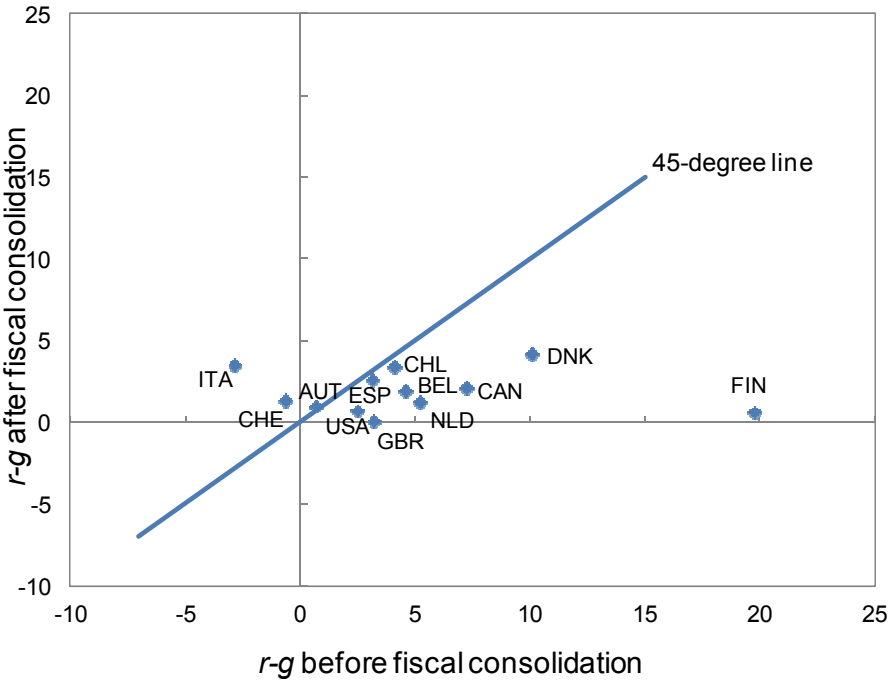
Source: IMF staff estimates. The differential corresponds to $[(\varrho–\gamma)/(1+\gamma)]$, as discussed in Table A1.1.

debt ratio, the higher the differential tends to be.[53] For example, the average differential when the debt-to-GDP ratio is above 90 percent is 3.2 percentage points, which is twice as large as when the debt ratio is between 60 percent and 90 percent (1.4 percentage points). A comparison based on the differentials averaged over the subsequent three years yields similar results. After a major fiscal consolidation, the interest-growth differential tends to fall below levels prevailing before consolidation. This can be seen in a comparison of the differential before fiscal consolidation (averaged over the previous four years) with that after consolidation (averaged over the following four years), based on episodes of large fiscal adjustments in advanced economies (i.e., structural primary balance adjustment of at least 5 percent of GDP). On average, the differential was almost twice as high before consolidation as after (4.7 versus 2.0 percentage points;[54] see Figure A1.3). However, the *short-term* effects on $r–g$ of fiscal consolidation can be ambiguous because consolidation generally adversely affects growth in the short term, though it is widely accepted that reducing debt tends to lower interest rates, leading to increased investment and growth in the longer term.

[53]Note, however, that it does not establish the causality from large debt to the high differential. Indeed, causality could run in the opposite direction.

[54]A favorable $r–g$ can also affect the fiscal adjustment outcome, of course. However, in the top largest debt reduction episodes in advanced economies, a primary deficit reduction was the main factor (IMF, 2010a).

**Figure A1.3. Interest-Growth Differentials Before and After Large Fiscal Consolidations**
***(Percentage points)***




Source: IMF staff estimates. Data on large fiscal adjustment episodes are from (IMF, 2010a).

APPENDIX

# 2 Are Sovereign Spreads Linked to Fundamentals?

This appendix assesses the extent to which different indicators of sovereign risk are correlated and the role that country fundamentals as well as global factors play in determining these indicators.[55] The analysis focuses on G-7 economies during and since the global financial crisis using monthly market expectations of economic and fiscal fundamentals.[56] It provides evidence suggesting a stable relationship between sovereign credit default swap (CDS) and relative asset swap (RAS) spreads, and suggests a similar response of both spreads to fundamentals. However, global and financial factors (such as global risk aversion and global growth, and bank balance sheets) are seen to play a greater role than fiscal indicators (projected budget deficits and debt).

The analysis suggests that sovereign CDS and RAS spreads tend to move together. The high degree of long-term co-movement is inferred by co-integration tests on CDS and RAS spreads. This result is consistent with the fact that bond yield spreads over the risk-free rate and spreads of CDS contracts written on the same underlying entities reflect alternative ways to price the same credit risk. Moreover, causality tests suggest that CDS tend to

[55]The appendix summarizes the ongoing work by Alper, Forni, and Gerard (forthcoming). It builds on previous IMF internal analysis conducted by Daniel Leigh. For recent work on bond yields differentials among euro area countries during the crisis, see Sgherri and Zoli (2009).

[56]Market expectations for deficit are from Consensus Forecasts (available only for G-7 economies over the sample period).

lead RAS spreads when the sovereign CDS market is relatively liquid, whereas the reverse holds true where this market remains small.

Consistent with the existence of a stable relationship, there is evidence that RAS and CDS spreads are influenced by common factors. To assess the relation between spreads and fundamentals, the following equation was estimated on monthly data for G-7 economies over the period January 2008–June 2010:[57]

$$\Delta CDS\_spread_{it} = \alpha \Delta E_t\, fiscal_{i,t} + \Delta X'_{it}\beta + \rho \Delta CDS\_spread_{it-1} + u_{it} \qquad (1)$$

where the dependent variable is the change in the CDS spread from month $t$–1 to month $t$; $\Delta E fiscal$ denotes the change in the *expected* fiscal variables (overall budget deficit and debt-to-GDP ratio); $X$ is a vector of other control variables including expected domestic growth rate, short-term interest rate, banking sector equity price relative to the overall index, expected world growth, and the VIX index (to proxy global risk aversion); and $u$ is a random error term. An analogous regression is run for RAS spreads. Each equation contains a constant term, time dummies, and a lagged dependent variable to capture possible overshooting.

Regression analysis indicates that spreads respond significantly more to global and financial factors than to measures of fiscal sustainability. A variety of measures of fiscal sustainability (such as expected budget deficit, debt, and growth) explain only about 12 percent of the variation in CDS and 17 percent in RAS spreads (Table A2.1 and Figure A2.1). Financial and global variables (banks stocks prices, short-term rates, global growth, global risk aversion, and time dummies) turn out to be the main determinants of spreads' variation, explaining about an additional 25 percent of the variation in CDS and almost 20 percent of the variation in RAS spreads. The analysis shows that the explanatory variables included in the regression are able to account for only about 36 percent of the overall variation, pointing to a large

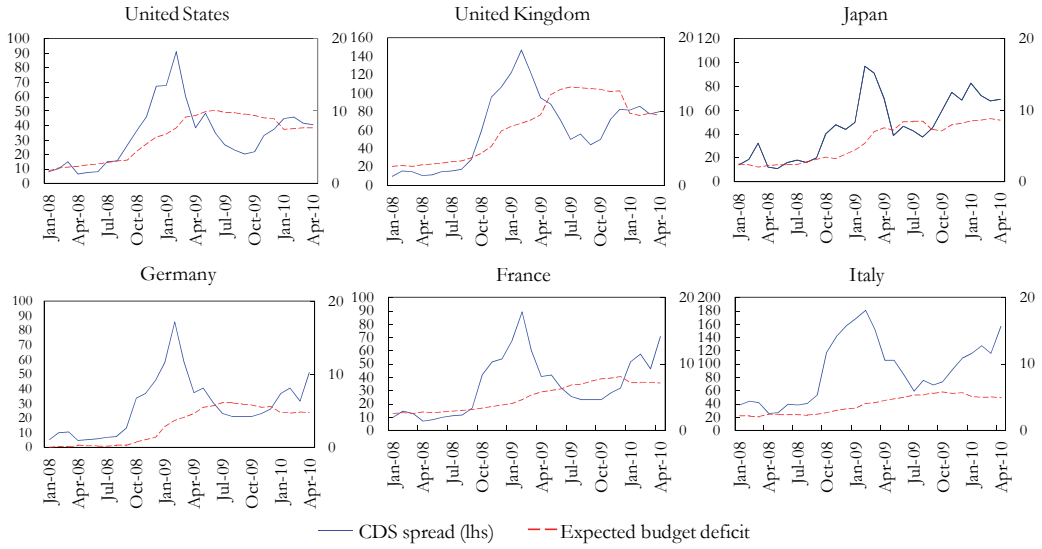
[57]The model is estimated in first differences by running random effects GLS regressions with robust standard errors. First differences are necessary as CDS and RAS spreads are nonstationary variables.

**Table A2.1. Explained Variation in Spreads**

| | CDS | RAS |
|---|---|---|
| Fiscal Sustainability | 11.7 | 17.2 |
| Financial Variables | 23.1 | 24.4 |
| Global Growth | 27.6 | 26.9 |
| Global Risk Aversion | 34.8 | 32.2 |
| Time Dummies | 36.2 | 35.8 |

Source: IMF staff estimates.
Note: The table reports the cumulative $R^2$ obtained by adding the reported variables in sequence.

**Figure A2.1. Development of CDS Spreads and Expected Budget Deficit**




Sources: Datastream; and Consensus forecast.

unexplained component, consistent with the empirical literature on corporate CDS spreads. This suggests that spreads may reflect market considerations that go far beyond a reasonable set of fundamentals and should be interpreted with caution when assessing the impact of fiscal policy developments on sovereign risk.[58]

[58]Ongoing work has replicated the above analysis for each individual advanced country (including the countries under market pressure) using the Economist Intelligence Unit (EIU) monthly forecast of expected deficit. Results suggests that for these countries, residuals are much larger than for large advanced countries, suggesting that market sentiment plays a much larger role for them.

APPENDIX

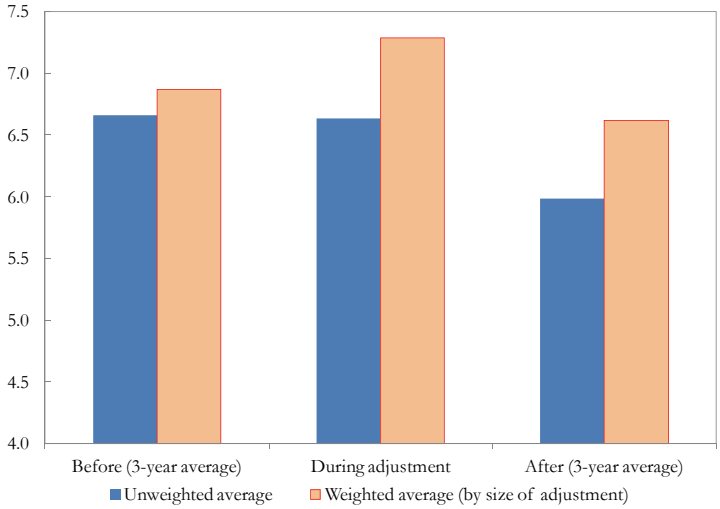
# 3 Fiscal Adjustment and Income Distribution in Advanced and Emerging Economies

Fiscal consolidation can increase income inequality in the short term, but the duration and magnitude of this effect depends on the growth response and the composition of fiscal adjustment. Adverse short-term effects are attributable mainly to rising unemployment. However, adjustment-induced changes in government expenditure and revenue policies that redistribute income can also play a critical role. The impact of these transmission channels on inequality has varied across advanced and emerging economies, reflecting differences in the size of multipliers and the incidence of revenue and spending adjustments.

## Advanced economies

Fiscal adjustment reduces output and increases unemployment in the short term because of positive fiscal multipliers, but these effects are reversed over the longer term (Blanchard and Perotti 2002; Spilimbergo, Symansky, and Schindler, 2009; IMF, 2010a). Consistent with the stylized facts on the business cycle, fiscal consolidation may lead to a decline in the share of wages within a few quarters by lowering demand and output, thus putting upward pressure on unemployment and downward pressure on wages (Rotemberg and Woodford, 1999). Inequality of labor income widens if low-wage workers are hit harder or employers start hoarding skilled labor. The duration of these effects depends on how quickly and strongly private

**Figure A3.1. Advanced Economies: Unemployment Rate during Large Fiscal Adjustments**
***(Percent)***




Sources: IMF staff estimates.
Note: Large fiscal adjustments as defined in IMF (2010a).

demand responds to fiscal shocks. In episodes of large fiscal adjustment, consolidation has been associated with increases in unemployment during the early years. Larger adjustments are associated with greater persistence in unemployment (Figure A3.1), especially if during the downturn there is an increase in structural unemployment. Over the longer term, the effects of fiscal consolidation on unemployment are reversed.

Improved targeting of expenditures can help reduce the effects of fiscal adjustment on income distribution. Large and durable fiscal adjustments have often been associated with significant expenditure cuts, including in public cash transfers (Alesina and Perotti, 1995; Alesina and Ardagna, 2009). In Europe, these transfers have been shown to lower income inequality (as measured by the Gini coefficient) by about 9 percentage points (OECD, 2008b), so reductions in these outlays may contribute to widening income inequality during adjustment episodes.[58] However, substantial fiscal adjustment can be associated with relatively small changes in income

[58]In the United States, Japan, and Canada, by comparison, social spending plays a less critical role in equalizing incomes.

inequality if expenditure reductions are accompanied by efforts to better target these benefits—as in Denmark, Germany, and Sweden.[59] The fact that a small share of social spending in the EU is means-tested suggests that there may be ample scope for reducing spending without adverse effects on inequality (Chapter 3, Figure 3.8). In contrast to expenditure cuts, revenue measures—particularly those related to income and wealth—are likely to reduce income disparities due to progressive tax systems in advanced economies (OECD, 2008b).[60] However, if taxes are already high, efficiency considerations place a limit on how much adjustment should be achieved through tax adjustment.

## Emerging economies

Compared to advanced countries, large fiscal adjustments in emerging economies have been of similar size but of much shorter duration. Despite smaller multipliers, fiscal shocks can still have a significant impact on the real economy and unemployment (Figure A3.2). At the same time, contrary to advanced economies, the size of consolidation does not seem to be associated with higher unemployment persistence, contributing to better income distribution outcomes in the post-adjustment period. In addition, fiscal consolidation is often essential to reduce high inflation, which has adverse effects on inequality, and can help to offset other macroeconomic imbalances leading to improved employment prospects.

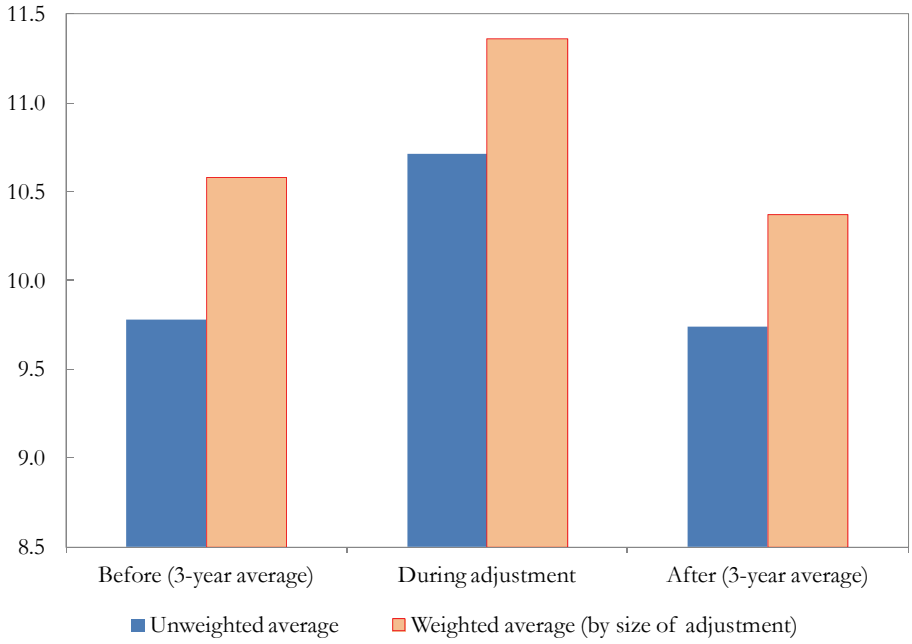
Fiscal adjustment has typically had an inequality-reducing effect over the longer term (Figure A3.3). Expenditure reductions implemented during fiscal adjustment can potentially improve equity, given that a large share of government spending in emerging economies is not progressive

[59]In Denmark and Germany, changes in household income distribution data (OECD, 2008b) suggest an increase in the progressivity of transfers during large fiscal adjustments. For a description of targeting efforts in Sweden, see IMF (2010a).

[60]The equalizing effects of revenue-based adjustments in the advanced economies have been offset by reductions in marginal tax rates, to some extent. Top marginal personal income tax rates in OECD countries have been reduced considerably over the past decades (Mankiw, Weinzierl, and Yagan, 2009).

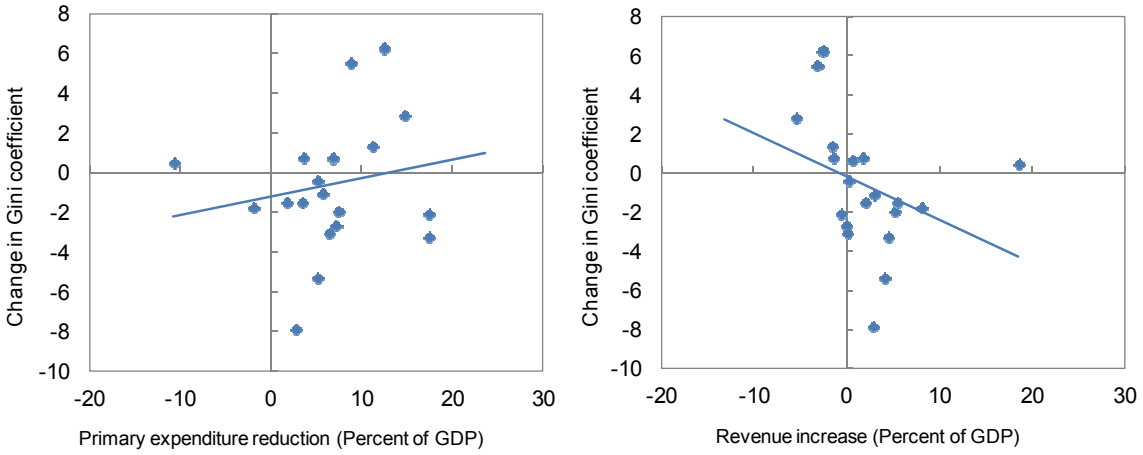
## Figure A3.2. Developing and Emerging Economies: Unemployment Rate during Large Fiscal Adjustments

*(Percent)*




Source: WEO and staff estimates.
Note: Large fiscal adjustments as defined in IMF (2010a).

## Figure A3.3. Emerging Markets: Large Fiscal Adjustments




Source: IMF staff estimates. Data on large fiscal adjustments are as reported in IMF (2010a); data on Gini coefficients are taken from the WIDER database.
Note: Positive values for a change in Gini coefficient denote an increase in income inequality.

(Alesina, 1998; Chu, Davoodi, and Gupta, 2004). One exception to this pattern has been emerging Europe, where large consolidations have been associated with increased inequality. To be sustainable, fiscal adjustment in emerging economies is also likely to require revenue measures (Bevan, 2010; Gupta and others, 2005). The impact of tax measures on inequality can be mitigated if these are accompanied by tax reforms that enhance the efficiency and equity of the tax system.

APPENDIX

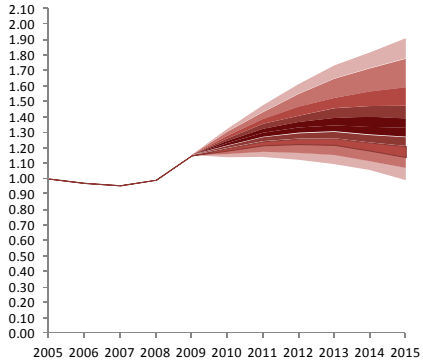
# 4 Risks to Medium-Term Public Debt Trajectories

The analysis of near-term rollover risks in Chapter 4 highlights various sources of uncertainty that also affect medium-term public debt trajectories. A quantitative assessment of the uncertainty around medium-term debt projections is obtained using a statistical model of debt sustainability (Celasun, Debrun, and Ostry, 2006). This relies on simulations calibrated on the past constellation of macroeconomic and financial shocks affecting debt dynamics (growth, interest rates, and the exchange rate) in the baseline and on the average policy response to these shocks. A key output from these simulations is a series of probability distributions of public debt (one for each year of the planning horizon) centered on the baseline. "Fan charts" (Figures A4.1 and A4.2) summarize that information by giving a snapshot of the likelihood of deviations from the planned trajectory, which is the median of each distribution.

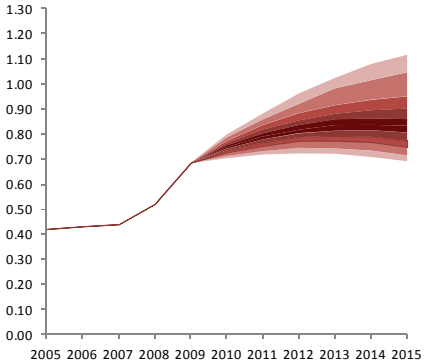
The uncertainty around the baseline reflects the intrinsic volatility of the economy. The fan charts gathered in the top panels of Figures A4.1 and A4.2 suggest that a more volatile economy, such as Greece, faces greater uncertainty around the debt baseline than historically more stable and resilient economies, such as Germany and the United States. This is evident from the width of the fan, which represents a probability mass of 90 percent. Assuming that future shocks to growth, primary balances, interest rates, and exchange rates follow historical distributions, the likely debt outcomes for

## Figure A4.1. Greece and the United Kingdom: Fan Charts for Public Debt-to-GDP Ratio

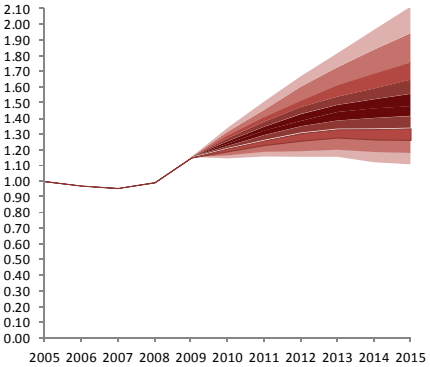
Greece: Baseline



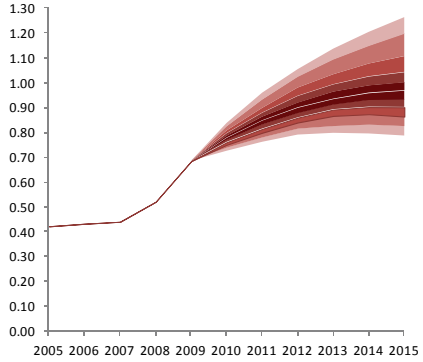

United Kingdom: Baseline



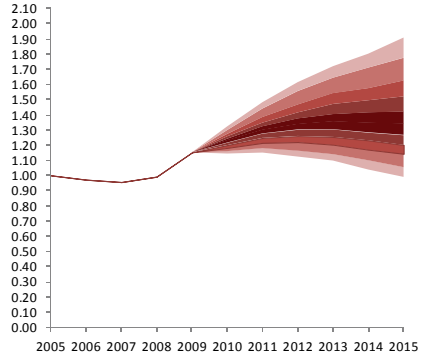

Greece: Implementation Risk



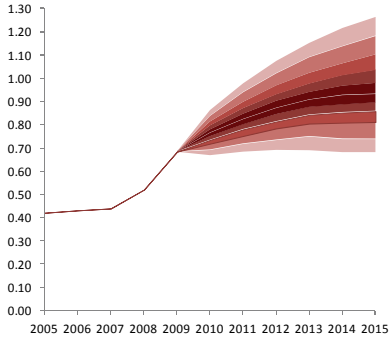

United Kingdom: Implementation Risk




Greece: Financial Sector Risk




United Kingdom: Financial Sector Risk

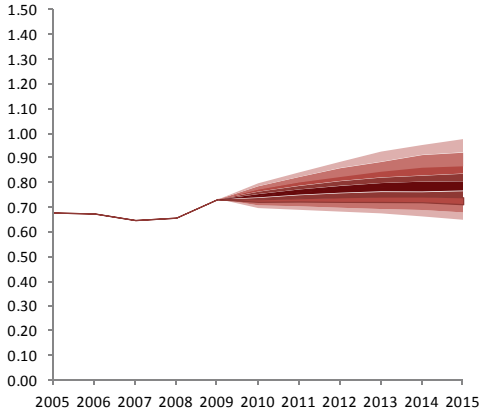



Sources: October 2010 WEO; and IMF staff calculations.

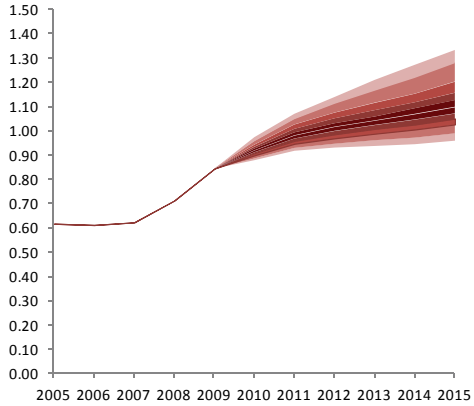
Note: Each fan chart depicts a 90 percent probability mass. The baseline fan charts are premised on the following assumptions: (1) in the absence of shocks, primary balances are aligned on the WEO baseline; (2) fiscal policy is allowed to respond to adverse shocks in a countercyclical fashion in line with past historical behavior estimated for a panel of advanced economies; and (3) the primary balance adjusts endogenously to debt developments in line with past historical behavior.

**Figure A4.2. Germany and the United States: Fan Charts for Public Debt-to-GDP Ratio**

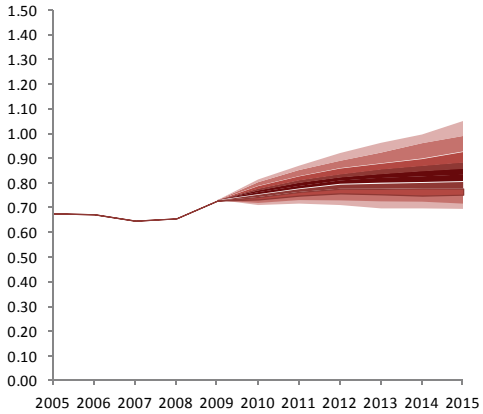
Germany: Baseline



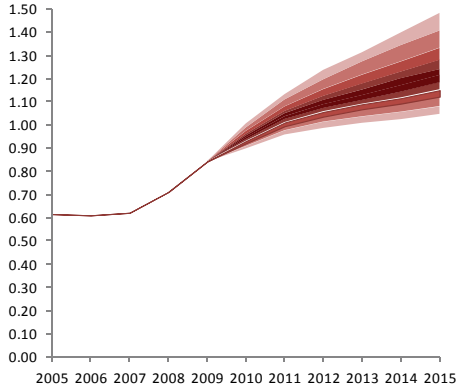

United States: Baseline



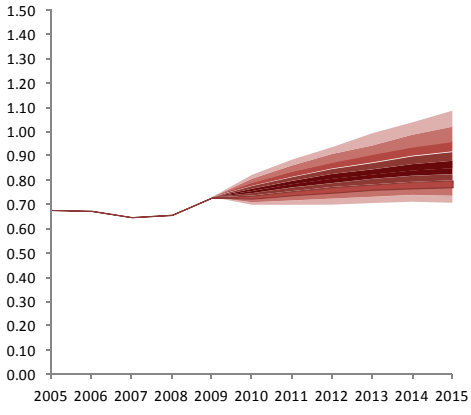

Germany: Implementation Risk



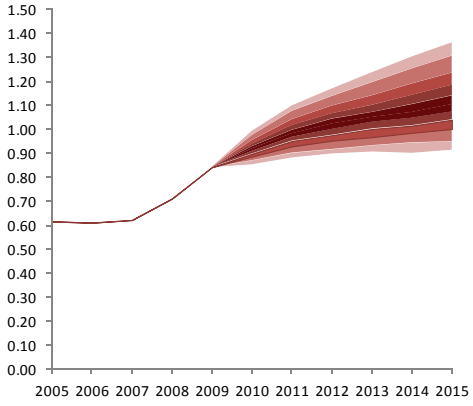

United States: Implementation Risk




Germany: Financial Sector Risk




United States: Financial Sector Risk




Source: October 2010 WEO and IMF staff calculations.
Note: See note in Figure A4.1.

Germany, the United Kingdom, and the United States fall within a range of 30 to 40 percent of GDP around the baseline by 2015. For Greece, the similarly defined range exceeds 90 percent of GDP, assuming historical policy response, and about 80 percent of GDP if current fiscal targets under the authorities' program are strictly adhered to, regardless of shocks.

The charts also indicate that shocks to growth and interest rates create greater upside risks than downside risks to public debt. For instance, the difference between the median and the 95$^{th}$ percentile of the debt distribution in 2015 amounts to 20 percent of GDP in Germany (about three-fifths of the total range); 28 percent of GDP in the United Kingdom (two-thirds of the total range); and 24 percent of GDP in the United States (slightly more than three-fifths of the total range); but it rises to 58 percent of GDP in Greece (almost two-thirds of the total range). This asymmetry in the distribution of debt outcomes reflects two effects: (1) the mechanical "snowball" (or *r-g*) effect, which is directly proportional to the debt level; and (2) the assumption that fiscal policies are allowed to accommodate those shocks in a similar fashion as in the past (either through automatic stabilizers or discretionary response), which was strongly asymmetric. Specifically, the historical response of the primary balance to the output gap indicated that countries tended to accommodate bad shocks, but generally failed to improve the balance in the event of positive shocks.

The analysis investigates the impact of two new sources of shocks on top of those occurring in the baseline. The first source is shocks arising from the difficulty in designing and implementing large fiscal adjustments. Consolidations involve unavoidable conflicts about the allocation of the adjustment burden among different groups and constituencies, which can cause delays in the implementation of the plans. Second, large stocks of contingent liabilities—such as guarantees to the financial sector—carry the risk that some may materialize.

The above two risks are modeled as increasing the historical variance of budgetary shocks. In the first case, the increase in variability of the primary fiscal balance is assumed to be proportional to the average planned annual

improvement in this balance over the forecasting horizon. Countries with larger adjustment needs consequently face greater execution risks and greater likelihood of bad debt outcomes over the medium term, as reflected in the meaningful widening of the fan charts (the panels showing implementation risk in Figures A4.1 and A4.2). For example, the probability that the public debt-to-GDP ratio in Greece exceeds 150 percent of GDP by 2015 rises to about 45 percent under this scenario, against slightly less than 25 percent under the baseline. Similarly, Germany faces a probability of about 30 percent that debt exceeds 90 percent of GDP by 2015 under the execution risk scenario, more than double the corresponding probability under the baseline. In the second case, the standard deviation of the budgetary shock is increased by 10 percent of the total stock of guarantees. The impact on upside risks to debt is particularly evident in the United Kingdom, where the probability that public debt exceeds 100 percent of GDP by 2015 rises to 35 percent, against 15 percent in the baseline simulation. In contrast, the relatively small stock of such guarantees in Greece means that upside risks to debt would be largely unaffected.

# Methodological and Statistical Appendix

This appendix comprises four sections: assumptions; data and conventions; economy groupings; and statistical tables. The assumptions underlying the estimates and projections for 2010–15 are summarized in the first section. The second section provides a general description of the data and of the conventions used for calculating country group composites. The third section presents the classification of countries in the various groups examined in the *Fiscal Monitor*. The last section comprises the statistical tables on key fiscal variables. Data in these tables have been compiled on the basis of information available through mid-September 2010.

## Fiscal Policy Assumptions

The historical data and projections of key fiscal aggregates are in line with those of the October 2010 *World Economic Outlook* (WEO), unless highlighted. For underlying assumptions, other than on fiscal policy, see the October 2010 WEO.

The short-term fiscal policy assumptions used in the WEO are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions and

projected fiscal outturns. The medium-term fiscal projections incorporate policy measures that are judged likely to be implemented. In cases where the IMF staff has insufficient information to assess the authorities' budget intentions and prospects for policy implementation, an unchanged cyclically adjusted primary balance is assumed, unless indicated otherwise. The specific assumptions relating to selected economies are listed below.

**Argentina**. The 2010 forecasts are based on the 2009 out turn and IMF staff assumptions. For the outer years, the IMF staff assumes unchanged policies.

**Australia.** Fiscal projections are based on the 2010–11 budget, July 2010 economic statement, 2010 pre-election economic and fiscal outlook, and IMF staff projections.

**Austria**. Fiscal projections for 2010 are based on the authorities' budget, adjusted for differences in the IMF staff's macro framework. For 2011, the IMF staff includes the central government's spending ceilings (approved by parliament) and the health insurance package savings for 2011–13.

**Belgium**. Projections for 2010 are IMF staff estimates based on the 2010 budgets approved by the federal, regional, and community parliaments and further strengthened by the Intergovernmental Agreement 2009–10. Projections for the outer years are IMF staff estimates, assuming unchanged policies.

**Brazil**. The 2011 forecasts are based on the budget law and IMF staff assumptions. For the outer years, the IMF staff assumes unchanged policies, with a further increase in public investment in line with the authorities' intentions.

**Canada**. Projections use the baseline forecasts in the latest Budget 2010—Leading the Way on Jobs and Growth. The IMF staff makes some adjustments to this forecast for differences in macroeconomic projections. The IMF staff forecast also incorporates the most recent data releases from

Finance Canada and Statistics Canada, including federal, provincial, and territorial budgetary outturns through the end of 2010:Q2.

**China**. For 2010–11, the government is assumed to continue and complete the stimulus program it announced in late 2008, although the lack of details published on this package complicates IMF staff analysis. Specifically, the IMF staff assumes the stimulus is not withdrawn in 2010.

**Denmark**. Projections for 2010–11 are aligned with the latest official budget estimates and the underlying economic projections, adjusted for IMF staff's macroeconomic assumptions. For 2012–15, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities' 2009 Convergence Program submitted to the European Union.

**France**. Projections for 2010 are based on the 2010 budget and the latest Stability Program and are adjusted for differences in macroeconomic assumptions. Projections for the outer years incorporate the IMF staff's assessment of current policies and implementation of announced adjustment measures.

**Germany**. Projections for 2010 are based on the 2010 budget, adjusted for the differences in the IMF staff's macro framework and estimates of the implementation of the fiscal stimulus measures. The IMF staff's projections for 2011 and beyond reflect the authorities' adopted core federal government budget plan, adjusted for the differences in the IMF staff's macro framework and assumptions on fiscal developments in state and local governments, the social insurance system, and special funds.

**Greece**. Macroeconomic and fiscal projections for 2010 and the medium term are consistent with the authorities' program supported by an IMF arrangement. Fiscal projections assume a strong frontloaded fiscal adjustment in 2010, followed by further measures in 2011–13. Growth is

expected to bottom out in late 2010 and gradually rebound after that, becoming positive in 2012.

**Hong Kong SAR**. Projections are based on the authorities' medium-term fiscal projection.

**Hungary**. The fiscal balance projections include staff projections of the macro framework and of the impact of existing legislated measures, as well as fiscal policy plans as announced by end-August 2010. To meet the recently announced commitments of the government to balances of 3.8 percent of GDP in 2010 and 3 percent of GDP in 2011, the authorities will need to approve additional measures

**India**. Historical data are based on budgetary execution data. Projections are based on available information on the authorities' fiscal plans, with some adjustments for the IMF staff's assumptions. Projections are based on the budget itself, as well as the semiannual budget review. Sub-national data are incorporated with a lag of up to two years; general government data are thus finalized long after central government data. IMF presentation differs from Indian national accounts data, particularly regarding subsidies and certain loans.

**Indonesia**. The 2010 revised budget deficit target (2.1 percent of GDP) was modestly expansionary mostly owing to the implementation of the second stage corporate tax cuts (0.5 percent of GDP); however, the fiscal stance is likely to remain neutral vis-à-vis 2009, with the 2010 deficit estimated at 1½ percent of GDP, reflecting stronger revenue performance and slow execution of spending (including capital spending). The IMF staff projections for 2011 reflect the authorities' proposed 2011 budget with a deficit target of 1¾ percent of GDP, implying a small fiscal impulse (0.2 percent of GDP). Beyond 2011, fiscal projections assume gradual fiscal consolidation, broadly consistent with the authorities' medium-term fiscal framework. The fiscal

strategy is to be supported by budget and revenue administration reforms, and reducing fuel subsidies.

**Ireland**. Fiscal projections for 2010 are based on the 2010 budget, adjusted for financial sector support and differences in macroeconomic assumptions between the IMF staff and the authorities. The IMF staff projections for the general government deficit include €8.3 billion from bank recapitalization that had been classified as expenditure by the Central Statistics Office of Ireland at the time the projections were finalized. However, the Irish authorities announced in late September that the amounts classified as expenditure from bank recapitalization would be about €30 billion (20 percent of GDP), which would then bring the deficit to about 32 percent of GDP in 2010. For 2011–12, IMF staff projections incorporate most of the adjustment efforts announced by the authorities in their Stability Program Update, although two-thirds of these measures still have not been specified or agreed by the government. For the remainder of the projection period and in the absence of specifically identified budgetary measures, the projections do not incorporate further budgetary adjustments.

**Italy**. The fiscal projections incorporate the impact of the 2010 budget law and fiscal adjustment measures for 2010–13, as approved by the government in May 2010 and modified by parliamentary approval in June and July. The IMF staff projections are based on the authorities' estimates of the policy scenario, including the above medium-term fiscal consolidation package, and adjusted mainly for differences in the macroeconomic assumptions and for less optimistic assumptions concerning the impact of revenue administration measures (to combat tax evasion). After 2013, a constant structural primary balance (net of one-time items) is assumed.

**Japan**. The 2010 projections assume that fiscal plans will be implemented as announced by the government. The medium-term projections typically assume that expenditure and revenue of the general government are adjusted

in line with current underlying demographic and economic trends (excluding fiscal stimulus).

**Korea**. The fiscal projections assume that fiscal policies will be implemented in 2010 as announced by the government. The 2010 budget scales back stimulus measures relative to 2009, implying a negative fiscal impulse estimated at 2 percent of GDP. Expenditure numbers for 2010 correspond to the expenditure numbers presented in the government's budget proposal. Revenue projections reflect the IMF staff's macroeconomic assumptions, adjusted for the estimated costs of tax measures included in the multiyear stimulus package introduced in 2009 and discretionary revenue-raising measures included in the 2010 budget proposal. The medium-term projections assume that the government will resume its consolidation plans and balance the budget (excluding social security funds) in 2014.

**Mexico**. Fiscal projections are based on (1) the IMF staff's macroeconomic projections; (2) the modified balanced budget rule under the Fiscal Responsibility Legislation, including the use of the exceptional clause; and (3) the authorities' projections for spending, including for pensions and health care and for wage-bill restraint. For 2010–11, projections take into account departure from the balanced budget target under the exceptional clause of the fiscal framework, which allows for a small deficit reflecting cyclical deterioration in revenues.

**Netherlands**. Fiscal projections for the period 2009–11 are based on Bureau for Economic Policy Analysis budget projections, after adjusting for differences in macroeconomic assumptions. For the remainder of the projection period, the projection assumes unchanged policies.

**New Zealand**. Fiscal projections are based on the authorities' 2010 budget and IMF staff estimates. The New Zealand fiscal accounts switched to new generally accepted accounting principles beginning in FY 2006/07, with no comparable historical data.

**Portugal**. For 2010, fiscal projections are based on the 2010 budget, adjusted for differences between the government's and the IMF staff's macroeconomic assumptions. For 2011 and beyond, the IMF staff largely incorporates the specific fiscal measures in the medium-term fiscal plan, adjusted for the IMF staff's macroeconomic projections.

**Russian Federation**. Projections for 2010 are based on the nominal expenditures in the 2010 budget, including the June supplementary budget, and IMF staff revenue projections. Projections for 2011–13 are based on the non-oil deficit in percent of GDP implied by the draft medium-term budget and on IMF staff revenue projections. The IMF staff assumes an unchanged non-oil federal government balance in terms of percent of GDP for 2013–15.

**Saudi Arabia**. IMF staff projections of oil revenues are based on WEO baseline oil prices discounted by 5 percent, reflecting the higher sulfur content in Saudi crude oil. Wages are assumed to rise above the natural rate of increase, reflecting a salary increase of 15 percent distributed during 2008–10, while capital spending in 2010 is projected to be higher than in the budget by about 32 percent and in line with the authorities' announcements of US$400 billion in spending over the medium term. The pace of spending is projected to slow over the medium term, leading to a tightening of the fiscal stance.

**Singapore**. For FY 2010/11, projections are based on budget numbers.

**South Africa**. Fiscal projections are based on the authorities' 2010 intentions as stated in the budget review published February 17, 2010, and on discussions conducted during the June Article IV consultation.

**Spain**. For 2010, fiscal projections incorporate the impact of measures in the 2010 budget, the latest Stability Program, and a May fiscal package. For 2011

and beyond, fiscal projections are based on the authorities' medium-term plan, adjusted for the IMF staff's macroeconomic projections.

**Sweden**. Fiscal projections for 2010 are in line with the authorities' projections. The impact of cyclical developments on the fiscal accounts is calculated using the Organization for Economic Cooperation and Development's latest semi-elasticity.

**Switzerland**. Projections for 2008–15 are based on IMF staff calculations, which incorporate measures to restore balance in the federal accounts and strengthen social security finances.

**Turkey**. Fiscal projections assume that the authorities adhere to the fiscal targets assumed in the Medium-Term Program unveiled in September 2009 (and thus do not reflect the program released in October 2010).

**United Kingdom**. Fiscal projections are based on the authorities' 2010 budget, announced in June 2010. These projections incorporate the announced medium-term consolidation plans from 2010 onward. The projections are adjusted for differences in forecasts of macroeconomic and financial variables.

**United States**. Fiscal projections are based on policies outlined in the administration's Mid-Session Budget Review for FY 2011. The authorities' federal budget projections are adjusted for differences in forecasts of key macroeconomic and financial variables and are converted to the general government basis. The estimates of fiscal deficit are also adjusted for one-off items (the cost of financial sector support).

## Data and Conventions

Data and projections for key fiscal variables are based on the October 2010 WEO, unless indicated otherwise. Where the *Fiscal Monitor* includes additional fiscal data and projections not covered by the WEO, data sources

are listed in the respective tables and figures. All fiscal data refer to the general government where available and to calendar years, with the exceptions of Pakistan and Singapore, where data refer to the fiscal year.

Composite data for country groups are weighted averages of individual country data unless otherwise specified. Data are weighted by GDP valued at PPP as a share of the group GDP in 2009. Fixed weights are assumed for all years, except in figures where annual weights are used.

For most countries, fiscal data follow the IMF's *Government Finance Statistics Manual (GFSM) 2001*. The concept of overall fiscal balance refers to net lending (+)/borrowing (–) of the general government. In some cases, however, the overall balance refers to total revenue and grants minus total expenditure and net lending.

Data on the financial sector support measures are based on the database on public interventions in the financial system compiled by the IMF's Fiscal Affairs Department and Monetary and Capital Markets Department, revised following a survey of the G-20 economies. Survey questionnaires were sent to all G-20 members in early December 2009 to review and update IMF staff estimates of financial sector support. Follow-up questionnaires were sent to Germany, the United Kingdom, and the United States in August 2010, consisting of recapitalization, asset purchases, liquidity support comprising asset swaps and treasury purchases, and guarantees. For each type of support, data were compiled for the amounts that had been initially announced or pledged, actually utilized, and recovered to date. The period covered is June 2007–June 2010.

Statistical Tables 3 and 4 of this appendix present IMF staff estimates of the general government cyclically adjusted overall and primary balances. For some countries, the series reflect additional adjustments as related to natural resource-related revenues or commodity-price developments (Chile and Peru); land revenue and investment income (Hong Kong SAR); tax policy

changes and the effects of asset prices on revenues (Sweden); and extraordinary operations related to the banking sector (Switzerland). Data for Norway are for cyclically adjusted non-oil overall or primary balance.

Additional country information, including for cases where reported fiscal aggregates in the *Monitor* differ from those reported in the WEO, follows:

**Argentina**. Following the national definition, the general government balance, primary balance, cyclically adjusted primary balance, and expenditure include accrued interest payments.

**Bulgaria**. The general government balance projections for 2010 reflect the data presented in the October 2010 WEO (on a cash basis).

**Colombia**. Historical figures for the overall fiscal balance as reported in the *Monitor* and WEO differ from those published by the Ministry of Finance, as they do not include the statistical discrepancy.

**Estonia**. Gross and net debts have been revised with respect to the WEO to reflect full consistency with Eurostat methodology.

**Finland**. Data on net debt of the general government have been revised compared to the May 2010 *Fiscal Monitor* to incorporate an expanded list of assets, using the Eurostat data, in line with the WEO methodology.

**Germany**. Data on net debt of the general government (Statistical Table 8) have been revised compared to the May 2010 *Fiscal Monitor* to incorporate an expanded list of assets, using the Eurostat data, in line with the WEO methodology.

**Italy**. Data on net debt of the general government (Statistical Table 8) have been revised compared to the May 2010 *Fiscal Monitor* to incorporate an expanded list of assets, using the Eurostat data, in line with the WEO methodology.

**Latvia**. In accordance with WEO conventions, the fiscal deficit shown in the *Monitor* includes bank restructuring costs and is thus higher than the deficit in official statistics.

**Philippines**. Fiscal data are for central government.

**Singapore**. Data are on a fiscal year rather than calendar year basis.

**Sweden**. Data on net debt of the general government (Statistical Table 8) have been revised compared to the May 2010 *Fiscal Monitor* to incorporate an expanded list of assets, using the Eurostat data, in line with the WEO methodology.

**Turkey**. Information on general government balance, primary balance, and cyclically adjusted primary balance as reported in this *Monitor* and the WEO differ from that published in the authorities' official statistics or country reports, which still include net lending. An additional difference from the authorities' official statistics is the exclusion of privatization receipts in staff projections.

## Economy Groupings

The following groupings of economies are used in the *Fiscal Monitor*.

| Advanced Economies | Emerging Economies | G-7 | G-20 | Advanced G-20 | Emerging G-20 | Euro Area |
|---|---|---|---|---|---|---|
| Australia | Argentina | Canada | Argentina | Australia | Argentina | Austria |
| Austria | Brazil | France | Australia | Canada | Brazil | Belgium |
| Belgium | Bulgaria | Germany | Brazil | France | China | Cyprus |
| Canada | Chile | Italy | Canada | Germany | India | Finland |
| Czech Republic | China | Japan | China | Italy | Indonesia | France |
| Denmark | Colombia | United Kingdom | France | Japan | Mexico | Germany |
| Finland | Estonia | United States | Germany | Korea | Russia | Greece |
| France | Hungary | | India | United Kingdom | Saudi Arabia | Ireland |
| Germany | India | | Indonesia | United States | South Africa | Italy |
| Greece | Indonesia | | Italy | | Turkey | Luxembourg |
| Hong Kong SAR | Kenya | | Japan | | | Malta |
| Iceland | Latvia | | Korea | | | Netherlands |
| Ireland | Lithuania | | Mexico | | | Portugal |
| Israel | Malaysia | | Russia | | | Slovak Republic |
| Italy | Mexico | | Saudi Arabia | | | Slovenia |
| Japan | Nigeria | | South Africa | | | Spain |
| Korea | Pakistan | | Turkey | | | |
| Netherlands | Peru | | United Kingdom | | | |
| New Zealand | Philippines | | United States | | | |
| Norway | Poland | | | | | |
| Portugal | Romania | | | | | |
| Singapore | Russia | | | | | |
| Slovak Republic | Saudi Arabia | | | | | |
| Slovenia | South Africa | | | | | |
| Spain | Thailand | | | | | |
| Sweden | Turkey | | | | | |
| Switzerland | Ukraine | | | | | |
| United Kingdom | | | | | | |
| United States | | | | | | |

## Economy Groupings *(concluded)*

| Emerging Asia | Emerging Europe | Emerging Latin America | Low-Income Economies | | Oil Producers | ASEAN |
|---|---|---|---|---|---|---|
| China | Bulgaria | Argentina | Bangladesh | Mali | Algeria | Indonesia |
| India | Estonia | Brazil | Benin | Mauritania | Angola | Malaysia |
| Indonesia | Hungary | Chile | Burkina Faso | Mozambique | Azerbaijan | Philippines |
| Malaysia | Latvia | Colombia | Burundi | Myanmar | Cameroon | Thailand |
| Pakistan | Lithuania | Mexico | Cambodia | Nepal | Chad | Vietnam |
| Philippines | Poland | Peru | Central African Rep. | Niger | Congo, Republic of | |
| Thailand | Romania | | Chad | Papua New Guinea | Ecuador | |
| | Russia | | Comoros | Rwanda | Equatorial Guinea | |
| | Turkey | | Congo, Dem. Rep. of | Sao Tome & Principe | Gabon | |
| | Ukraine | | Cote d'Ivoire | Senegal | Indonesia | |
| | | | Eritrea | Sierra Leone | Iran | |
| | | | Ethiopia | Solomon Islands | Kazakhstan | |
| | | | Gambia | Tajikistan | Mexico | |
| | | | Ghana | Tanzania | Nigeria | |
| | | | Guinea | Togo | Russia | |
| | | | Guinea-Bissau | Uganda | Sudan | |
| | | | Haiti | Uzbekistan | Syria | |
| | | | Kyrgyz Republic | Vietnam | Timor-Leste | |
| | | | Lao P.D.R | Yemen | Trinidad and Tobago | |
| | | | Liberia | Zambia | Venezuela | |
| | | | Madagascar | | Vietnam | |
| | | | Malawi | | Yemen | |

Source: IMF staff compilations based on October 2010 WEO.

# Statistical Tables

## Statistical Table 1. General Government Balance
### *(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 2.0 | 1.5 | -0.5 | -4.1 | -4.6 | -2.5 | -0.6 | 0.1 | 0.4 | 0.7 |
| Austria | -1.6 | -0.5 | -0.5 | -3.5 | -4.8 | -4.1 | -3.8 | -3.6 | -3.5 | -3.4 |
| Belgium | 0.3 | -0.2 | -1.2 | -5.9 | -4.8 | -5.1 | -5.3 | -5.2 | -5.2 | -5.2 |
| Canada | 1.6 | 1.6 | 0.1 | -5.5 | -4.9 | -2.9 | -2.1 | -1.4 | -0.7 | -0.2 |
| Czech Republic | -2.6 | -0.7 | -2.7 | -5.9 | -5.4 | -5.6 | -5.2 | -5.3 | -5.2 | -5.2 |
| Denmark | 4.9 | 4.6 | 3.4 | -2.8 | -4.6 | -4.4 | -3.6 | -2.3 | -1.6 | -1.1 |
| Finland | 4.0 | 5.2 | 4.2 | -2.4 | -3.4 | -1.8 | -2.0 | -2.4 | -2.5 | -2.5 |
| France | -2.3 | -2.7 | -3.3 | -7.6 | -8.0 | -6.0 | -4.7 | -3.8 | -3.0 | -2.2 |
| Germany | -1.6 | 0.2 | 0.0 | -3.1 | -4.5 | -3.7 | -3.0 | -2.4 | -1.8 | -1.4 |
| Greece | -3.1 | -3.7 | -7.7 | -13.6 | -7.9 | -7.3 | -6.2 | -4.7 | -2.5 | -2.0 |
| Hong Kong SAR | 4.1 | 7.7 | 0.1 | 1.6 | 1.5 | 1.8 | 2.7 | 3.4 | 4.7 | 0.7 |
| Iceland | 6.3 | 5.4 | -0.5 | -12.6 | -9.2 | -5.6 | -1.1 | 1.3 | 1.8 | 2.8 |
| Ireland | 2.9 | 0.1 | -7.3 | -14.6 | -31.9 | -11.8 | -9.3 | -8.1 | -6.8 | -5.8 |
| Israel | -1.2 | -0.2 | -2.0 | -4.5 | -3.7 | -2.8 | -1.8 | -1.6 | -1.1 | -1.1 |
| Italy | -3.3 | -1.5 | -2.7 | -5.2 | -5.1 | -4.3 | -3.6 | -3.5 | -3.2 | -3.0 |
| Japan | -4.0 | -2.4 | -4.1 | -10.2 | -9.6 | -8.9 | -8.1 | -7.8 | -7.6 | -7.4 |
| Korea | 2.4 | 4.2 | 1.7 | 0.0 | 1.4 | 2.0 | 2.3 | 2.7 | 2.7 | 2.6 |
| Netherlands | 0.6 | 0.3 | 0.4 | -5.0 | -6.0 | -5.1 | -4.5 | -4.3 | -4.1 | -4.1 |
| New Zealand | 2.6 | 2.5 | 0.1 | -3.5 | -4.8 | -4.2 | -2.9 | -2.1 | -1.4 | -0.6 |
| Norway | 18.5 | 17.7 | 19.3 | 9.9 | 11.1 | 11.3 | 11.7 | 12.1 | 11.9 | 11.8 |
| Portugal | -0.4 | -2.8 | -2.8 | -9.3 | -7.3 | -5.2 | -4.8 | -4.3 | -5.7 | -5.8 |
| Singapore | 5.5 | 10.3 | 5.1 | -0.9 | 2.4 | 1.5 | 1.8 | 1.9 | 2.1 | 2.2 |
| Slovak Republic | -3.4 | -1.9 | -2.3 | -6.8 | -8.0 | -4.7 | -3.7 | -2.9 | -2.3 | -1.8 |
| Slovenia | -0.8 | 0.3 | -0.3 | -5.6 | -5.7 | -4.3 | -3.0 | -1.9 | -1.4 | -0.8 |
| Spain | 2.0 | 1.9 | -4.1 | -11.2 | -9.3 | -6.9 | -6.3 | -5.6 | -4.9 | -4.4 |
| Sweden | 2.4 | 3.7 | 2.4 | -0.8 | -2.2 | -1.4 | 0.2 | 2.1 | 1.6 | 1.7 |
| Switzerland | 1.4 | 2.1 | 0.7 | 1.4 | -1.0 | -0.9 | 0.1 | 0.3 | 0.3 | 0.0 |
| United Kingdom | -2.6 | -2.7 | -4.9 | -10.3 | -10.2 | -8.1 | -6.4 | -4.7 | -3.4 | -2.4 |
| United States | -2.0 | -2.7 | -6.7 | -12.9 | -11.1 | -9.7 | -6.7 | -5.7 | -5.9 | -6.5 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | -1.1 | -2.1 | -0.3 | -3.7 | -3.5 | -3.8 | -3.4 | -2.4 | -2.3 | -1.8 |
| Brazil | -3.5 | -2.6 | -1.3 | -3.2 | -1.7 | -1.2 | -1.7 | -1.5 | -1.4 | -1.2 |
| Bulgaria | 3.5 | 3.5 | 3.0 | -0.9 | -4.9 | -4.2 | -4.3 | -3.9 | -3.2 | -2.8 |
| Chile | 7.9 | 8.4 | 4.3 | -4.3 | -1.6 | -0.6 | -0.4 | -0.4 | -0.1 | -0.3 |
| China | -0.7 | 0.9 | -0.4 | -3.0 | -2.9 | -1.9 | -1.3 | -0.8 | -0.4 | 0.1 |
| Colombia | -0.8 | -1.0 | 0.1 | -2.5 | -3.5 | -3.9 | -3.0 | -2.6 | -2.3 | -2.1 |
| Estonia | 3.2 | 2.9 | -2.3 | -2.1 | -1.1 | -1.7 | -3.2 | -3.3 | -3.2 | -3.4 |
| Hungary | -9.4 | -5.0 | -3.7 | -4.1 | -4.2 | -4.5 | -5.2 | -5.3 | -5.3 | -5.2 |
| India | -5.5 | -4.2 | -7.6 | -10.1 | -9.6 | -8.8 | -8.5 | -7.9 | -7.3 | -6.7 |
| Indonesia | 0.2 | -1.2 | 0.0 | -1.6 | -1.5 | -1.7 | -1.6 | -1.5 | -1.5 | -1.4 |
| Kenya | -2.5 | -2.8 | -3.9 | -5.3 | -6.6 | -5.1 | -3.3 | -3.2 | -3.3 | -3.5 |
| Latvia | -0.5 | 0.6 | -7.5 | -7.8 | -11.9 | -7.6 | -1.8 | -0.2 | 0.7 | 0.6 |
| Lithuania | -0.4 | -1.0 | -3.3 | -8.9 | -7.7 | -7.7 | -7.3 | -6.6 | -5.9 | -5.3 |
| Malaysia | -2.1 | -2.6 | -3.2 | -5.5 | -4.6 | -5.5 | -5.2 | -5.0 | -4.8 | -4.6 |
| Mexico | -1.0 | -1.3 | -1.4 | -4.9 | -3.6 | -3.0 | -2.7 | -2.7 | -2.7 | -2.7 |
| Nigeria | 7.0 | -1.3 | 3.5 | -10.3 | -7.9 | -4.3 | -3.1 | -1.7 | -1.4 | -1.2 |
| Pakistan | -4.8 | -5.5 | -7.3 | -4.9 | -6.2 | -3.6 | -2.5 | -2.4 | -1.8 | -1.6 |
| Peru | 1.9 | 3.2 | 2.2 | -2.1 | -0.8 | -0.1 | -0.3 | 0.1 | 0.1 | 0.1 |
| Philippines | -1.4 | -1.5 | -1.3 | -3.9 | -3.9 | -3.5 | -2.8 | -2.0 | -1.9 | -1.9 |
| Poland | -3.6 | -1.9 | -3.7 | -7.1 | -7.4 | -6.7 | -5.6 | -4.8 | -4.5 | -3.9 |
| Romania | -1.4 | -3.1 | -4.8 | -7.4 | -6.8 | -4.4 | -3.0 | -2.4 | -2.3 | -1.4 |
| Russia | 8.3 | 6.8 | 4.3 | -6.2 | -4.8 | -3.6 | -2.9 | -2.5 | -3.1 | -3.4 |
| Saudi Arabia | 24.6 | 15.7 | 35.4 | -2.4 | 1.9 | 6.2 | 6.5 | 5.5 | 5.8 | 6.6 |
| South Africa | 0.8 | 1.2 | -0.5 | -5.3 | -5.9 | -4.6 | -3.2 | -1.6 | -0.5 | 0.7 |
| Thailand | 2.2 | 0.2 | 0.1 | -3.2 | -2.7 | -2.3 | -1.6 | -1.5 | -1.4 | -1.2 |
| Turkey | 0.1 | -1.7 | -2.4 | -5.6 | -3.5 | -2.6 | -2.2 | -2.1 | -1.9 | -1.5 |
| Ukraine | -1.4 | -2.0 | -3.2 | -6.2 | -5.5 | -3.5 | -2.5 | -2.3 | -2.3 | -2.3 |
| Average | -0.8 | -0.6 | -2.4 | -7.2 | -6.5 | -5.3 | -4.1 | -3.5 | -3.3 | -3.2 |
| *Advanced* | -1.3 | -1.1 | -3.7 | -8.9 | -8.1 | -6.8 | -5.1 | -4.3 | -4.1 | -4.1 |
| *Emerging* | -0.2 | 0.0 | -0.6 | -4.8 | -4.2 | -3.3 | -2.8 | -2.4 | -2.1 | -1.8 |
| G-7 | -2.3 | -2.1 | -4.7 | -10.1 | -9.3 | -7.9 | -6.0 | -5.2 | -5.0 | -5.0 |
| G-20 | -1.2 | -0.9 | -2.7 | -7.6 | -6.8 | -5.6 | -4.3 | -3.7 | -3.5 | -3.4 |
| *Advanced G-20* | -1.9 | -1.7 | -4.3 | -9.5 | -8.7 | -7.4 | -5.4 | -4.7 | -4.5 | -4.5 |
| *Emerging G-20* | -0.1 | 0.3 | -0.3 | -4.7 | -4.0 | -3.2 | -2.7 | -2.3 | -2.0 | -1.7 |

Sources: October 2010 WEO; and IMF staff calculations.

## Statistical Table 2. General Government Primary Balance
*(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 1.7 | 1.2 | -0.8 | -4.1 | -4.3 | -2.1 | -0.1 | 0.5 | 0.8 | 1.1 |
| Austria | 0.3 | 1.4 | 1.2 | -1.7 | -2.9 | -2.2 | -2.0 | -1.6 | -1.5 | -1.5 |
| Belgium | 4.3 | 3.7 | 2.6 | -2.1 | -1.1 | -1.5 | -1.9 | -1.7 | -1.5 | -1.4 |
| Canada | 2.2 | 2.2 | 0.1 | -4.6 | -4.5 | -2.8 | -2.2 | -1.6 | -1.1 | -0.8 |
| Czech Republic | -1.9 | 0.1 | -1.9 | -4.8 | -3.9 | -3.8 | -3.3 | -3.3 | -3.3 | -3.3 |
| Denmark | 5.5 | 5.1 | 3.7 | -2.1 | -4.3 | -4.3 | -3.7 | -2.5 | -1.7 | -1.2 |
| Finland | 3.6 | 4.6 | 3.2 | -3.0 | -4.7 | -3.0 | -3.0 | -3.2 | -3.1 | -3.0 |
| France | -0.1 | -0.4 | -0.8 | -5.5 | -5.8 | -3.6 | -2.3 | -1.3 | -0.5 | 0.3 |
| Germany | 0.8 | 2.6 | 2.5 | -0.8 | -2.2 | -1.5 | -1.0 | -0.5 | 0.1 | 0.4 |
| Greece | 1.1 | 0.5 | -3.1 | -8.6 | -2.2 | -0.8 | 1.0 | 3.1 | 5.7 | 5.8 |
| Hong Kong SAR | 4.2 | 7.7 | 0.1 | 1.6 | 1.5 | 1.8 | 2.7 | 3.4 | 4.7 | 0.7 |
| Iceland | 6.7 | 5.7 | -0.3 | -7.4 | -2.7 | 0.5 | 3.9 | 6.0 | 6.0 | 6.0 |
| Ireland | 3.2 | 0.3 | -6.9 | -13.1 | -29.3 | -8.1 | -5.3 | -3.7 | -1.9 | -0.7 |
| Israel | 2.8 | 3.8 | 1.1 | -1.4 | -0.5 | 0.4 | 1.3 | 1.4 | 1.8 | 1.7 |
| Italy | 1.1 | 3.3 | 2.2 | -0.9 | -0.8 | 0.4 | 1.5 | 1.8 | 2.1 | 2.3 |
| Japan | -3.5 | -1.9 | -3.4 | -9.1 | -8.2 | -7.2 | -6.4 | -5.8 | -5.2 | -5.1 |
| Korea | 3.7 | 5.6 | 3.1 | 1.5 | 2.8 | 3.3 | 3.7 | 3.9 | 3.7 | 3.6 |
| Netherlands | 2.2 | 2.0 | 1.9 | -3.3 | -4.2 | -3.0 | -2.6 | -2.3 | -2.0 | -1.9 |
| New Zealand | 4.1 | 3.8 | 1.4 | -2.0 | -3.1 | -2.2 | -0.7 | 0.0 | 0.8 | 1.6 |
| Norway | 16.3 | 14.8 | 16.2 | 7.4 | 8.6 | 8.7 | 9.1 | 9.4 | 9.2 | 8.9 |
| Portugal | 2.2 | -0.1 | 0.1 | -6.4 | -4.1 | -1.7 | -1.2 | -0.7 | -1.9 | -1.7 |
| Singapore | 4.8 | 9.6 | 4.4 | -1.6 | 1.7 | 0.8 | 1.1 | 1.2 | 1.4 | 1.5 |
| Slovak Republic | -2.2 | -0.9 | -1.4 | -5.5 | -6.8 | -3.0 | -2.0 | -1.2 | -0.6 | 0.0 |
| Slovenia | 0.3 | 1.2 | 0.5 | -4.6 | -4.5 | -2.9 | -1.6 | -0.5 | 0.0 | 0.6 |
| Spain | 3.3 | 3.0 | -3.0 | -9.9 | -7.5 | -4.7 | -3.7 | -2.7 | -1.7 | -1.0 |
| Sweden | 2.1 | 3.2 | 1.7 | -1.6 | -3.2 | -2.5 | -0.8 | 1.1 | 0.5 | 0.6 |
| Switzerland | 2.9 | 3.4 | 1.9 | 2.6 | 0.1 | 0.2 | 1.1 | 1.3 | 1.2 | 0.9 |
| United Kingdom | -1.1 | -1.1 | -3.3 | -8.4 | -7.6 | -5.2 | -3.5 | -1.8 | -0.5 | 0.5 |
| United States | -0.1 | -0.6 | -4.7 | -11.2 | -9.5 | -8.0 | -4.5 | -3.2 | -2.8 | -2.7 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 4.0 | 2.4 | 2.7 | 0.2 | -0.1 | -0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Brazil | 3.3 | 3.4 | 4.1 | 2.1 | 3.3 | 3.2 | 3.2 | 3.3 | 3.3 | 3.3 |
| Bulgaria | 4.5 | 4.1 | 2.9 | -0.5 | -4.6 | -3.6 | -3.7 | -3.1 | -2.7 | -2.3 |
| Chile | 8.1 | 8.2 | 4.0 | -4.5 | -1.6 | -0.7 | -0.6 | -0.5 | -0.3 | -0.4 |
| China | -0.2 | 1.3 | 0.1 | -2.5 | -2.4 | -1.4 | -0.8 | -0.4 | 0.1 | 0.5 |
| Colombia | 1.7 | 1.7 | 2.3 | -0.6 | -1.5 | -1.9 | -1.0 | -0.5 | -0.3 | -0.1 |
| Estonia | 3.4 | 3.0 | -2.2 | -1.8 | -0.9 | -1.5 | -3.0 | -3.1 | -2.9 | -3.1 |
| Hungary | -5.7 | -1.3 | -0.1 | -0.2 | -0.5 | -0.6 | -1.0 | -0.8 | -0.5 | -0.1 |
| India | 0.0 | 1.1 | -2.5 | -4.8 | -4.5 | -4.0 | -1.8 | -0.8 | -0.5 | -0.2 |
| Indonesia | 2.6 | 0.8 | 1.8 | 0.1 | 0.1 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Kenya | -0.2 | -0.6 | -1.7 | -3.1 | -4.3 | -2.6 | -0.9 | -0.9 | -0.9 | -1.1 |
| Latvia | 0.1 | 1.0 | -7.1 | -6.7 | -10.5 | -5.6 | 0.3 | 1.9 | 2.8 | 2.7 |
| Lithuania | 0.1 | -0.5 | -2.8 | -8.0 | -6.1 | -5.4 | -4.9 | -4.1 | -3.3 | -2.6 |
| Malaysia | -0.5 | -1.1 | -1.6 | -3.9 | -2.9 | -4.0 | -3.5 | -3.2 | -2.9 | -2.7 |
| Mexico | 1.7 | 1.4 | 1.3 | -2.3 | -1.7 | -1.1 | -0.8 | -0.4 | -0.3 | -0.3 |
| Nigeria | 8.0 | -0.3 | 4.5 | -9.2 | -6.3 | -2.7 | -1.7 | -0.6 | -0.3 | -0.2 |
| Pakistan | -1.7 | -1.2 | -2.6 | -0.1 | -1.8 | -0.1 | 0.1 | 0.1 | 0.2 | 0.5 |
| Peru | 3.7 | 4.9 | 3.7 | -0.8 | 0.3 | 1.0 | 0.8 | 1.2 | 1.1 | 1.0 |
| Philippines | 2.8 | 1.6 | 1.7 | -1.1 | -0.6 | -0.4 | 0.3 | 0.9 | 0.9 | 0.8 |
| Poland | -1.0 | 0.4 | -1.5 | -4.5 | -4.5 | -3.5 | -2.4 | -1.4 | -1.1 | -0.4 |
| Romania | -0.6 | -2.4 | -4.1 | -6.2 | -5.1 | -2.6 | -1.3 | -0.8 | -0.7 | 0.2 |
| Russia | 8.9 | 6.8 | 4.5 | -5.9 | -4.3 | -2.9 | -2.1 | -1.7 | -2.3 | -2.7 |
| Saudi Arabia | 25.6 | 15.4 | 34.8 | -2.2 | 2.1 | 6.0 | 6.2 | 5.0 | 5.4 | 6.0 |
| South Africa | 3.7 | 3.8 | 2.1 | -2.8 | -3.2 | -1.5 | 0.1 | 1.7 | 2.7 | 3.7 |
| Thailand | 3.5 | 1.2 | 1.0 | -2.4 | -1.9 | -1.4 | -0.7 | -0.7 | -0.6 | -0.5 |
| Turkey | 5.2 | 3.2 | 2.0 | -1.1 | 0.1 | 0.7 | 1.3 | 1.3 | 1.4 | 1.5 |
| Ukraine | -0.7 | -1.5 | -2.6 | -5.1 | -4.0 | -1.6 | -0.5 | -0.4 | -0.4 | -0.2 |
| Average | 1.2 | 1.3 | -0.5 | -5.3 | -4.6 | -3.4 | -1.9 | -1.2 | -0.8 | -0.6 |
| *Advanced* | 0.4 | 0.7 | -2.0 | -7.2 | -6.4 | -4.9 | -3.0 | -2.0 | -1.5 | -1.3 |
| *Emerging* | 2.3 | 2.2 | 1.5 | -2.6 | -2.1 | -1.3 | -0.5 | -0.1 | 0.1 | 0.4 |
| G-7 | -0.4 | -0.1 | -2.8 | -8.3 | -7.4 | -5.9 | -3.7 | -2.7 | -2.1 | -1.9 |
| G-20 | 0.9 | 1.1 | -0.7 | -5.6 | -4.9 | -3.7 | -2.1 | -1.3 | -0.9 | -0.7 |
| *Advanced G-20* | -0.1 | 0.2 | -2.5 | -7.7 | -6.9 | -5.4 | -3.3 | -2.3 | -1.8 | -1.6 |
| *Emerging G-20* | 2.4 | 2.5 | 1.8 | -2.5 | -2.0 | -1.2 | -0.3 | 0.1 | 0.3 | 0.5 |

Sources: October 2010 WEO; and IMF staff calculations.

## Statistical Table 3. General Government Cyclically Adjusted Overall Balance
### *(Percent of potential GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 1.9 | 1.3 | -0.7 | -3.9 | -4.4 | -2.5 | -0.6 | 0.0 | 0.3 | 0.7 |
| Austria | -2.1 | -2.0 | -2.3 | -2.7 | -4.3 | -3.7 | -3.7 | -3.6 | -3.5 | -3.5 |
| Belgium | -0.7 | -1.1 | -2.2 | -3.8 | -3.4 | -3.0 | -2.4 | -2.3 | -2.2 | -2.1 |
| Canada | 0.8 | 0.6 | 0.0 | -3.2 | -3.4 | -2.0 | -1.6 | -1.2 | -0.7 | -0.2 |
| Czech Republic | -3.1 | -1.7 | -3.4 | -4.6 | -4.4 | -4.7 | -4.8 | -5.1 | -5.3 | -5.5 |
| Denmark | 2.8 | 3.3 | 2.8 | -0.9 | -3.1 | -3.1 | -2.5 | -1.7 | -1.3 | -1.1 |
| Finland | 2.3 | 2.4 | 1.7 | 0.1 | -0.7 | 0.3 | -0.5 | -1.6 | -2.2 | -2.5 |
| France | -2.7 | -3.2 | -3.2 | -5.6 | -6.3 | -4.6 | -3.7 | -3.1 | -2.7 | -2.1 |
| Germany | -1.6 | -0.5 | -0.5 | -0.9 | -3.3 | -2.9 | -2.5 | -2.2 | -1.8 | -1.5 |
| Greece | -4.9 | -7.3 | -9.7 | -16.5 | -7.1 | -5.3 | -4.3 | -3.1 | -1.0 | -0.8 |
| Hong Kong SAR[1] | 0.0 | 1.3 | -0.3 | -2.4 | -1.0 | -1.5 | -0.5 | 0.0 | 1.2 | 1.2 |
| Iceland | 4.4 | 2.5 | -1.8 | -6.6 | 1.9 | -3.9 | -0.3 | 1.3 | 1.8 | 2.8 |
| Ireland[2] | -4.2 | -7.5 | -11.3 | -9.5 | -8.6 | -7.3 | -6.6 | -6.4 | -6.2 | -5.9 |
| Israel | -1.5 | -0.8 | -2.8 | -4.2 | -3.7 | -2.9 | -2.0 | -1.7 | -1.1 | -1.1 |
| Italy | -3.7 | -2.3 | -2.4 | -3.3 | -3.5 | -2.9 | -2.6 | -2.8 | -2.9 | -3.0 |
| Japan | -3.9 | -2.5 | -3.6 | -7.3 | -7.6 | -7.2 | -6.9 | -7.1 | -7.2 | -7.3 |
| Korea | 2.3 | 4.2 | 1.8 | 0.8 | 1.5 | 1.9 | 2.3 | 2.6 | 2.6 | 2.6 |
| Netherlands | 0.3 | -1.1 | -1.6 | -4.6 | -5.7 | -4.8 | -4.3 | -4.1 | -4.0 | -3.9 |
| New Zealand | 2.0 | 2.1 | 0.4 | -2.1 | -3.5 | -3.4 | -2.4 | -1.9 | -1.4 | -0.6 |
| Norway[1] | -2.7 | -2.7 | -2.9 | -4.7 | -5.3 | -4.8 | -4.4 | -4.1 | -3.9 | -3.6 |
| Portugal | -3.8 | -3.5 | -3.3 | -8.1 | -6.1 | -4.0 | -3.3 | -3.1 | -4.7 | -5.1 |
| Singapore | 6.8 | 11.4 | 6.0 | -0.4 | 0.7 | 0.1 | 0.6 | 0.7 | 0.9 | 0.9 |
| Slovak Republic | -3.9 | -2.6 | -2.8 | -5.8 | -6.9 | -4.1 | -3.4 | -2.7 | -2.3 | -1.8 |
| Slovenia | -2.0 | -2.6 | -3.7 | -4.3 | -3.9 | -2.7 | -2.0 | -1.5 | -1.3 | -0.9 |
| Spain | 0.7 | 0.2 | -5.2 | -9.7 | -7.5 | -5.3 | -5.3 | -5.0 | -4.7 | -4.4 |
| Sweden[1] | 0.4 | 1.0 | 0.9 | 1.7 | 0.4 | 0.8 | 1.4 | 1.7 | 1.8 | 1.9 |
| Switzerland[1] | 1.2 | 1.4 | 1.7 | 0.9 | -0.3 | -0.2 | 0.5 | 0.5 | 0.4 | 0.0 |
| United Kingdom | -2.7 | -3.1 | -5.6 | -8.3 | -7.9 | -6.2 | -4.8 | -3.4 | -2.4 | -1.7 |
| United States[2] | -2.0 | -2.1 | -4.8 | -7.2 | -7.9 | -7.0 | -4.9 | -4.5 | -5.0 | -5.7 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 3.5 | 0.7 | 1.0 | -2.8 | -3.7 | -4.0 | -3.2 | -2.1 | -2.0 | -1.8 |
| Brazil | -3.3 | -3.0 | -2.0 | -2.3 | -1.8 | -1.2 | -1.7 | -1.5 | -1.4 | -1.2 |
| Bulgaria | 1.9 | 0.5 | -0.1 | 0.0 | -2.7 | -2.0 | -2.6 | -2.5 | -2.5 | -2.7 |
| Chile[1] | 0.7 | 1.0 | -0.4 | -3.2 | -4.0 | -3.0 | -2.4 | -1.8 | -1.0 | -0.5 |
| China | -0.6 | 0.3 | -0.8 | -3.1 | -3.2 | -2.2 | -1.5 | -1.0 | -0.5 | 0.0 |
| Colombia | -1.2 | -2.0 | -1.1 | -1.6 | -3.2 | -3.8 | -3.0 | -2.6 | -2.3 | -2.2 |
| Estonia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hungary | -11.2 | -6.1 | -4.3 | -0.9 | -1.1 | -1.7 | -2.8 | -3.2 | -3.6 | -3.8 |
| India | -5.4 | -3.9 | -7.4 | -10.1 | -8.7 | -7.2 | -5.7 | -4.7 | -4.2 | -3.9 |
| Indonesia | 0.3 | -1.3 | -0.1 | -1.4 | -1.2 | -1.5 | -1.4 | -1.5 | -1.7 | -1.9 |
| Kenya | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Latvia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Lithuania | -2.0 | -4.0 | -6.2 | -5.7 | -5.8 | -6.5 | -6.5 | -6.2 | -5.9 | -5.2 |
| Malaysia | -3.6 | -3.8 | -5.3 | -6.3 | -5.5 | -5.8 | -5.5 | -5.1 | -4.8 | -4.5 |
| Mexico | -0.4 | -0.8 | -1.0 | -2.7 | -2.8 | -2.3 | -2.1 | -2.3 | -2.4 | -2.5 |
| Nigeria | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pakistan | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Peru[1] | -0.6 | 1.0 | 0.1 | -1.8 | -1.9 | -0.7 | -0.7 | -0.1 | 0.0 | 0.1 |
| Philippines | -1.5 | -2.0 | -1.6 | -3.6 | -4.0 | -3.2 | -2.4 | -1.7 | -1.5 | -1.4 |
| Poland | -3.8 | -2.5 | -4.5 | -6.8 | -7.1 | -6.6 | -5.7 | -4.9 | -4.5 | -3.8 |
| Romania | -4.1 | -6.7 | -9.7 | -6.6 | -4.1 | -1.8 | -1.2 | -1.3 | -1.7 | -1.2 |
| Russia | 8.4 | 6.0 | 3.0 | -3.3 | -2.8 | -2.4 | -2.3 | -2.3 | -3.0 | -3.4 |
| Saudi Arabia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| South Africa | -0.1 | -0.3 | -2.1 | -4.8 | -5.3 | -4.0 | -2.7 | -1.3 | -0.5 | 0.3 |
| Thailand | 1.6 | -0.5 | -1.1 | -2.3 | -2.7 | -2.0 | -1.5 | -1.3 | -1.1 | -0.9 |
| Turkey | -3.0 | -4.7 | -4.5 | -5.0 | -4.3 | -3.3 | -2.8 | -2.6 | -2.4 | -1.9 |
| Ukraine | ... | -5.0 | -5.4 | -2.1 | -2.2 | -1.1 | -1.3 | -1.6 | -1.9 | -1.9 |
| Average | -1.4 | -1.2 | -2.8 | -5.1 | -5.2 | -4.4 | -3.4 | -3.1 | -3.0 | -3.0 |
| *Advanced* | -1.7 | -1.5 | -3.3 | -5.7 | -6.1 | -5.2 | -4.0 | -3.7 | -3.7 | -3.8 |
| *Emerging* | -0.9 | -0.8 | -2.0 | -4.2 | -4.0 | -3.2 | -2.6 | -2.1 | -1.9 | -1.6 |
| G-7 | -2.3 | -2.1 | -3.8 | -6.1 | -6.8 | -5.9 | -4.6 | -4.2 | -4.3 | -4.6 |
| G-20 | -1.5 | -1.2 | -2.8 | -5.1 | -5.4 | -4.5 | -3.5 | -3.1 | -3.1 | -3.1 |
| *Advanced G-20* | -2.0 | -1.7 | -3.5 | -5.8 | -6.4 | -5.5 | -4.2 | -3.8 | -3.9 | -4.1 |
| *Emerging G-20* | -0.7 | -0.5 | -1.8 | -4.3 | -3.9 | -3.1 | -2.5 | -2.0 | -1.8 | -1.5 |

Sources: October 2010 WEO; and IMF staff calculations.

[1] For details, see section on Data and Conventions.

[2] Cyclically adjusted overall balance excluding financial sector support recorded above the line.

## Statistical Table 4. General Government Cyclically Adjusted Primary Balance

*(Percent of potential GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 1.6 | 0.9 | -1.0 | -3.9 | -4.1 | -2.0 | -0.2 | 0.5 | 0.7 | 1.0 |
| Austria | -0.1 | 0.1 | -0.5 | -1.0 | -2.4 | -1.9 | -1.8 | -1.6 | -1.6 | -1.5 |
| Belgium | 3.4 | 2.9 | 1.6 | -0.1 | 0.2 | 0.5 | 1.0 | 1.2 | 1.5 | 1.7 |
| Canada | 1.5 | 1.2 | 0.0 | -2.3 | -2.9 | -1.8 | -1.7 | -1.4 | -1.1 | -0.8 |
| Czech Republic | -2.4 | -0.9 | -2.6 | -3.6 | -3.0 | -3.0 | -2.9 | -3.2 | -3.4 | -3.6 |
| Denmark | 3.4 | 3.8 | 3.1 | -0.2 | -2.8 | -3.1 | -2.6 | -1.9 | -1.4 | -1.2 |
| Finland | 1.9 | 1.7 | 0.7 | -0.5 | -2.0 | -1.0 | -1.5 | -2.4 | -2.7 | -3.0 |
| France | -0.4 | -0.9 | -0.6 | -3.6 | -4.1 | -2.3 | -1.3 | -0.7 | -0.2 | 0.4 |
| Germany | 0.8 | 2.0 | 1.9 | 1.3 | -1.0 | -0.7 | -0.5 | -0.3 | 0.0 | 0.3 |
| Greece | -0.5 | -2.9 | -4.7 | -11.3 | -1.5 | 0.9 | 2.6 | 4.4 | 6.8 | 6.8 |
| Hong Kong SAR[1] | 0.1 | 1.4 | -0.3 | -2.4 | -1.0 | -1.5 | -0.4 | 0.1 | 1.3 | 1.2 |
| Iceland | 4.8 | 2.8 | -1.5 | -1.5 | 7.7 | 2.1 | 4.7 | 6.0 | 6.0 | 6.0 |
| Ireland[2] | -3.9 | -7.3 | -10.8 | -8.0 | -6.1 | -3.8 | -2.7 | -2.1 | -1.3 | -0.7 |
| Israel | 2.5 | 3.2 | 0.4 | -1.1 | -0.5 | 0.4 | 1.2 | 1.3 | 1.7 | 1.7 |
| Italy | 0.7 | 2.5 | 2.4 | 0.9 | 0.7 | 1.7 | 2.4 | 2.4 | 2.4 | 2.3 |
| Japan | -3.4 | -2.0 | -2.8 | -6.2 | -6.2 | -5.6 | -5.3 | -5.1 | -4.9 | -5.0 |
| Korea | 3.7 | 5.6 | 3.2 | 2.2 | 2.9 | 3.3 | 3.6 | 3.8 | 3.7 | 3.6 |
| Netherlands | 1.9 | 0.6 | 0.0 | -2.9 | -3.9 | -2.8 | -2.4 | -2.1 | -1.9 | -1.7 |
| New Zealand | 3.4 | 3.4 | 1.8 | -0.6 | -1.9 | -1.4 | -0.3 | 0.2 | 0.8 | 1.5 |
| Norway[1] | -5.0 | -5.7 | -6.0 | -7.1 | -7.7 | -7.4 | -7.0 | -6.8 | -6.6 | -6.4 |
| Portugal | -1.2 | -0.8 | -0.4 | -5.3 | -3.0 | -0.6 | 0.2 | 0.5 | -0.9 | -1.0 |
| Singapore | 6.1 | 10.7 | 5.3 | -1.1 | 0.0 | -0.6 | -0.1 | 0.0 | 0.2 | 0.2 |
| Slovak Republic | -2.7 | -1.5 | -1.9 | -4.5 | -5.7 | -2.4 | -1.6 | -1.0 | -0.6 | 0.0 |
| Slovenia | -0.9 | -1.6 | -2.9 | -3.4 | -2.7 | -1.4 | -0.6 | 0.0 | 0.1 | 0.5 |
| Spain | 2.1 | 1.3 | -4.1 | -8.5 | -5.7 | -3.2 | -2.7 | -2.2 | -1.6 | -1.0 |
| Sweden[1] | 0.1 | 0.4 | 0.2 | 0.9 | -0.7 | -0.2 | 0.4 | 0.7 | 0.8 | 0.8 |
| Switzerland[1] | 2.7 | 2.8 | 2.8 | 2.1 | 0.8 | 0.8 | 1.5 | 1.5 | 1.3 | 0.9 |
| United Kingdom | -1.1 | -1.5 | -4.0 | -6.5 | -5.4 | -3.4 | -1.9 | -0.6 | 0.4 | 1.1 |
| United States[2] | 0.0 | 0.0 | -2.9 | -5.5 | -6.5 | -5.4 | -2.9 | -2.0 | -2.0 | -2.0 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 8.5 | 5.4 | 4.1 | 1.1 | -0.1 | -0.1 | 0.3 | 0.5 | 0.5 | 0.2 |
| Brazil | 3.5 | 3.1 | 3.5 | 3.0 | 3.3 | 3.2 | 3.2 | 3.3 | 3.3 | 3.3 |
| Bulgaria | 2.9 | 1.2 | -0.2 | 0.4 | -2.4 | -1.4 | -2.0 | -1.8 | -2.0 | -2.2 |
| Chile[1] | 0.9 | 0.8 | -0.7 | -3.4 | -4.1 | -3.1 | -2.5 | -1.9 | -1.2 | -0.6 |
| China | -0.2 | 0.7 | -0.3 | -2.7 | -2.7 | -1.7 | -1.0 | -0.5 | -0.1 | 0.4 |
| Colombia | 1.4 | 0.9 | 1.1 | 0.3 | -1.3 | -1.8 | -0.9 | -0.6 | -0.3 | -0.2 |
| Estonia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hungary | -7.3 | -2.3 | -0.6 | 2.8 | 2.4 | 1.9 | 1.2 | 1.1 | 1.1 | 1.2 |
| India | 0.1 | 1.5 | -2.3 | -4.8 | -3.7 | -2.4 | 1.0 | 2.4 | 2.6 | 2.7 |
| Indonesia | 2.6 | 0.7 | 1.7 | 0.3 | 0.3 | 0.1 | 0.1 | 0.0 | -0.2 | -0.4 |
| Kenya | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Latvia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Lithuania | -1.4 | -3.4 | -5.7 | -4.8 | -4.3 | -4.2 | -4.1 | -3.7 | -3.2 | -2.5 |
| Malaysia | -1.9 | -2.4 | -3.6 | -4.7 | -3.9 | -4.2 | -3.8 | -3.3 | -2.9 | -2.6 |
| Mexico | 2.4 | 1.9 | 1.7 | -0.4 | -1.0 | -0.5 | -0.3 | 0.0 | -0.1 | -0.1 |
| Nigeria | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pakistan | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Peru[1] | 1.2 | 2.6 | 1.7 | -0.5 | -0.7 | 0.4 | 0.4 | 1.0 | 1.0 | 1.1 |
| Philippines | 2.7 | 1.2 | 1.4 | -0.8 | -0.7 | -0.1 | 0.7 | 1.2 | 1.2 | 1.3 |
| Poland | -1.1 | -0.2 | -2.2 | -4.3 | -4.3 | -3.5 | -2.4 | -1.5 | -1.1 | -0.4 |
| Romania | -3.2 | -5.9 | -8.9 | -5.4 | -2.5 | -0.1 | 0.4 | 0.3 | -0.1 | 0.4 |
| Russia | 8.9 | 6.0 | 3.3 | -3.0 | -2.3 | -1.8 | -1.5 | -1.5 | -2.3 | -2.7 |
| Saudi Arabia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| South Africa | 2.9 | 2.4 | 0.5 | -2.3 | -2.6 | -0.9 | 0.6 | 1.9 | 2.7 | 3.3 |
| Thailand | 2.9 | 0.5 | -0.2 | -1.6 | -1.9 | -1.1 | -0.5 | -0.5 | -0.3 | -0.1 |
| Turkey | 2.4 | 0.6 | 0.1 | -0.6 | -0.7 | 0.0 | 0.7 | 0.8 | 0.9 | 1.0 |
| Ukraine | ... | -4.4 | -4.8 | -1.0 | -0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.2 |
| Average | 0.6 | 0.8 | -0.9 | -3.3 | -3.4 | -2.5 | -1.3 | -0.7 | -0.5 | -0.4 |
| *Advanced* | 0.0 | 0.3 | -1.6 | -4.1 | -4.4 | -3.3 | -2.0 | -1.4 | -1.2 | -1.1 |
| *Emerging* | 1.6 | 1.5 | 0.2 | -2.0 | -1.9 | -1.1 | -0.2 | 0.3 | 0.4 | 0.6 |
| G-7 | -0.4 | -0.1 | -1.9 | -4.4 | -5.0 | -4.0 | -2.4 | -1.8 | -1.6 | -1.5 |
| G-20 | 0.7 | 0.9 | -0.8 | -3.2 | -3.5 | -2.6 | -1.3 | -0.7 | -0.5 | -0.4 |
| *Advanced G-20* | -0.2 | 0.2 | -1.6 | -4.1 | -4.7 | -3.6 | -2.1 | -1.5 | -1.3 | -1.2 |
| *Emerging G-20* | 1.9 | 1.9 | 0.5 | -2.0 | -1.8 | -1.0 | -0.1 | 0.4 | 0.6 | 0.8 |

Sources: October 2010 WEO; and IMF staff calculations.

[1]For details, see section on Data and Conventions.

[2]Cyclically adjusted primary balance excluding financial sector support recorded above the line.

## Statistical Table 5. General Government Expenditure
*(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 34.4 | 34.0 | 34.4 | 37.4 | 36.6 | 35.3 | 34.6 | 33.9 | 33.7 | 33.4 |
| Austria | 49.4 | 48.5 | 48.8 | 52.3 | 52.3 | 51.7 | 51.5 | 51.5 | 51.4 | 51.3 |
| Belgium | 48.4 | 48.3 | 50.0 | 54.0 | 53.0 | 53.5 | 53.8 | 53.5 | 53.5 | 53.6 |
| Canada | 39.3 | 39.2 | 39.6 | 43.8 | 42.7 | 40.9 | 40.4 | 40.0 | 39.8 | 39.5 |
| Czech Republic | 43.7 | 42.5 | 42.9 | 46.1 | 45.9 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 |
| Denmark | 51.7 | 51.1 | 51.9 | 58.4 | 55.7 | 55.0 | 54.2 | 53.5 | 53.0 | 52.6 |
| Finland | 43.8 | 42.2 | 43.8 | 49.4 | 50.2 | 49.7 | 50.1 | 50.0 | 49.8 | 49.7 |
| France | 52.7 | 52.3 | 52.8 | 56.0 | 56.3 | 55.5 | 54.8 | 53.9 | 53.1 | 52.3 |
| Germany | 45.3 | 43.6 | 43.9 | 47.6 | 46.5 | 45.7 | 44.7 | 44.0 | 43.1 | 42.6 |
| Greece | 42.6 | 44.1 | 48.3 | 50.4 | 47.4 | 49.3 | 48.0 | 46.0 | 43.2 | 41.8 |
| Hong Kong SAR | 15.4 | 14.5 | 18.8 | 17.9 | 18.6 | 18.9 | 18.4 | 17.7 | 17.0 | 16.7 |
| Iceland | 41.6 | 42.3 | 44.8 | 52.1 | 48.2 | 44.1 | 40.6 | 39.2 | 38.7 | 37.6 |
| Ireland | 33.4 | 35.8 | 41.7 | 49.0 | 67.2 | 47.7 | 46.7 | 45.8 | 44.8 | 43.8 |
| Israel | 45.5 | 44.7 | 44.0 | 44.0 | 44.2 | 43.4 | 42.5 | 41.9 | 41.4 | 41.3 |
| Italy | 48.7 | 47.8 | 48.8 | 51.9 | 51.2 | 50.1 | 49.4 | 49.2 | 48.9 | 48.6 |
| Japan | 34.7 | 33.4 | 35.6 | 39.7 | 39.7 | 39.8 | 39.4 | 39.9 | 40.0 | 39.6 |
| Korea | 20.7 | 20.8 | 22.7 | 24.0 | 22.3 | 21.5 | 21.4 | 21.3 | 21.3 | 21.4 |
| Netherlands | 45.6 | 44.9 | 45.7 | 50.0 | 50.1 | 49.9 | 49.5 | 49.3 | 49.1 | 49.4 |
| New Zealand | 32.6 | 31.2 | 33.0 | 34.7 | 34.8 | 33.9 | 33.2 | 32.7 | 32.4 | 31.6 |
| Norway | 40.3 | 41.0 | 40.5 | 46.1 | 45.5 | 45.2 | 44.8 | 44.4 | 44.6 | 44.7 |
| Portugal | 40.8 | 43.7 | 43.4 | 48.0 | 47.7 | 46.7 | 46.5 | 45.9 | 46.0 | 46.0 |
| Singapore | 15.3 | 14.4 | 18.4 | 20.5 | 19.7 | 19.9 | 19.7 | 19.6 | 19.4 | 18.4 |
| Slovak Republic | 36.9 | 34.4 | 34.8 | 40.8 | 38.9 | 36.6 | 35.9 | 35.3 | 34.7 | 34.2 |
| Slovenia | 42.5 | 40.3 | 41.6 | 46.8 | 47.7 | 46.3 | 45.0 | 43.8 | 43.1 | 42.4 |
| Spain | 38.4 | 39.2 | 41.1 | 45.8 | 45.6 | 43.9 | 43.8 | 43.5 | 43.0 | 42.6 |
| Sweden | 50.6 | 48.8 | 49.3 | 52.7 | 53.7 | 53.4 | 52.6 | 52.2 | 52.4 | 52.0 |
| Switzerland | 35.0 | 34.5 | 35.3 | 36.7 | 36.4 | 36.5 | 35.4 | 35.2 | 35.2 | 35.2 |
| United Kingdom | 40.6 | 40.3 | 42.7 | 47.2 | 46.6 | 45.2 | 44.0 | 42.7 | 41.5 | 40.6 |
| United States | 35.8 | 36.6 | 39.1 | 43.3 | 41.4 | 41.2 | 39.7 | 39.7 | 40.7 | 41.4 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 31.0 | 33.7 | 33.7 | 37.6 | 38.1 | 38.4 | 38.2 | 37.3 | 37.2 | 36.7 |
| Brazil | 39.4 | 38.3 | 38.0 | 39.3 | 38.0 | 37.8 | 38.2 | 38.1 | 38.0 | 37.9 |
| Bulgaria | 35.3 | 37.2 | 36.5 | 37.2 | 39.3 | 38.6 | 38.0 | 37.2 | 36.2 | 35.5 |
| Chile | 19.7 | 20.4 | 22.8 | 26.0 | 25.6 | 25.2 | 24.6 | 24.6 | 24.5 | 24.8 |
| China | 18.9 | 18.9 | 20.0 | 23.0 | 22.3 | 21.7 | 21.8 | 21.8 | 21.9 | 21.9 |
| Colombia | 28.1 | 28.2 | 26.5 | 29.3 | 28.2 | 29.2 | 28.4 | 28.2 | 28.0 | 28.0 |
| Estonia | 34.6 | 35.4 | 41.5 | 47.6 | 47.8 | 46.8 | 46.6 | 44.6 | 42.5 | 42.4 |
| Hungary | 52.0 | 49.9 | 49.2 | 49.8 | 48.7 | 47.9 | 47.8 | 47.8 | 47.8 | 47.8 |
| India | 25.7 | 26.0 | 27.6 | 29.9 | 29.2 | 29.2 | 29.5 | 29.2 | 28.2 | 27.2 |
| Indonesia | 20.1 | 19.7 | 20.4 | 17.2 | 17.3 | 17.6 | 17.6 | 17.7 | 17.9 | 18.1 |
| Kenya | 24.6 | 26.0 | 27.1 | 29.0 | 30.5 | 30.2 | 29.4 | 29.9 | 29.0 | 28.8 |
| Latvia | 36.6 | 35.6 | 42.9 | 44.0 | 49.6 | 44.5 | 37.9 | 33.7 | 33.4 | 33.2 |
| Lithuania | 33.9 | 35.0 | 37.6 | 43.3 | 41.8 | 41.9 | 41.1 | 39.5 | 38.3 | 37.7 |
| Malaysia | 27.1 | 27.9 | 28.8 | 32.5 | 30.5 | 31.5 | 31.4 | 31.1 | 30.7 | 30.4 |
| Mexico | 22.4 | 22.7 | 24.3 | 27.1 | 25.6 | 24.9 | 24.5 | 24.4 | 24.1 | 23.9 |
| Nigeria | 26.9 | 29.7 | 29.3 | 30.3 | 33.8 | 30.3 | 29.2 | 27.9 | 27.3 | 26.9 |
| Pakistan | 19.5 | 20.8 | 22.3 | 19.6 | 20.7 | 19.2 | 18.4 | 18.7 | 18.3 | 18.2 |
| Peru | 18.2 | 17.7 | 18.8 | 21.1 | 20.8 | 20.2 | 19.9 | 19.5 | 19.4 | 19.2 |
| Philippines | 17.5 | 17.3 | 17.1 | 18.6 | 18.9 | 19.3 | 19.4 | 19.5 | 19.4 | 19.4 |
| Poland | 43.9 | 42.2 | 43.2 | 44.4 | 46.7 | 46.4 | 45.9 | 45.5 | 45.0 | 44.4 |
| Romania | 33.7 | 35.4 | 37.0 | 39.2 | 39.1 | 36.9 | 35.7 | 34.8 | 33.7 | 32.1 |
| Russia | 31.1 | 33.1 | 34.3 | 40.5 | 39.3 | 38.8 | 38.2 | 37.6 | 37.6 | 37.6 |
| Saudi Arabia | 32.0 | 34.4 | 30.8 | 44.5 | 42.8 | 40.7 | 39.9 | 40.4 | 39.0 | 37.5 |
| South Africa | 26.9 | 27.2 | 29.9 | 32.8 | 33.2 | 32.4 | 31.5 | 30.5 | 30.0 | 29.4 |
| Thailand | 20.1 | 21.3 | 21.3 | 24.0 | 23.7 | 23.5 | 23.1 | 23.1 | 23.1 | 23.0 |
| Turkey | 32.7 | 33.3 | 33.8 | 37.3 | 35.7 | 34.8 | 34.5 | 34.5 | 34.2 | 33.8 |
| Ukraine | 44.6 | 43.8 | 47.4 | 48.5 | 48.3 | 45.3 | 44.2 | 44.0 | 44.1 | 44.1 |
| Average | 33.2 | 33.3 | 34.7 | 38.1 | 37.3 | 36.7 | 36.1 | 35.9 | 35.9 | 35.8 |
| *Advanced* | 38.5 | 38.4 | 40.2 | 44.0 | 43.1 | 42.5 | 41.5 | 41.3 | 41.4 | 41.4 |
| *Emerging* | 25.7 | 26.0 | 26.9 | 29.7 | 29.1 | 28.6 | 28.5 | 28.3 | 28.1 | 27.8 |
| G-7 | 39.1 | 39.1 | 41.0 | 45.0 | 43.8 | 43.3 | 42.2 | 42.0 | 42.3 | 42.3 |
| G-20 | 32.7 | 32.8 | 34.3 | 37.8 | 36.8 | 36.3 | 35.7 | 35.5 | 35.5 | 35.5 |
| *Advanced G-20* | 38.2 | 38.1 | 40.0 | 43.8 | 42.7 | 42.1 | 41.1 | 40.9 | 41.1 | 41.2 |
| *Emerging G-20* | 24.9 | 25.2 | 26.2 | 29.2 | 28.4 | 28.0 | 27.9 | 27.8 | 27.5 | 27.3 |

Sources: October 2010 WEO; and IMF staff calculations.

## Statistical Table 6. General Government Revenue
### *(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 36.3 | 35.6 | 33.9 | 33.3 | 32.0 | 32.9 | 34.0 | 34.0 | 34.0 | 34.1 |
| Austria | 47.8 | 47.9 | 48.3 | 48.8 | 47.5 | 47.6 | 47.7 | 47.9 | 47.9 | 47.9 |
| Belgium | 48.7 | 48.1 | 48.9 | 48.0 | 48.2 | 48.4 | 48.5 | 48.3 | 48.3 | 48.4 |
| Canada | 40.8 | 40.7 | 39.8 | 38.3 | 37.8 | 38.0 | 38.3 | 38.6 | 39.0 | 39.3 |
| Czech Republic | 41.1 | 41.8 | 40.2 | 40.2 | 40.5 | 40.5 | 40.8 | 40.8 | 40.8 | 40.8 |
| Denmark | 56.6 | 55.7 | 55.3 | 55.6 | 51.2 | 50.6 | 50.6 | 51.1 | 51.4 | 51.5 |
| Finland | 47.8 | 47.4 | 48.0 | 47.0 | 46.8 | 47.9 | 48.1 | 47.6 | 47.3 | 47.2 |
| France | 50.3 | 49.6 | 49.5 | 48.4 | 48.3 | 49.5 | 50.0 | 50.1 | 50.1 | 50.1 |
| Germany | 43.7 | 43.8 | 44.0 | 44.4 | 42.1 | 42.0 | 41.7 | 41.6 | 41.4 | 41.1 |
| Greece | 39.5 | 40.4 | 40.6 | 36.9 | 39.5 | 42.0 | 41.8 | 41.3 | 40.7 | 39.8 |
| Hong Kong SAR | 19.5 | 22.2 | 18.9 | 19.5 | 20.1 | 20.7 | 21.1 | 21.1 | 21.7 | 17.4 |
| Iceland | 48.0 | 47.7 | 44.2 | 39.4 | 38.9 | 38.5 | 39.5 | 40.4 | 40.5 | 40.4 |
| Ireland | 36.3 | 35.8 | 34.3 | 34.4 | 35.4 | 35.9 | 37.4 | 37.8 | 37.9 | 38.0 |
| Israel | 44.3 | 44.5 | 42.0 | 39.5 | 40.5 | 40.6 | 40.7 | 40.3 | 40.3 | 40.2 |
| Italy | 45.4 | 46.4 | 46.2 | 46.6 | 46.0 | 45.8 | 45.8 | 45.7 | 45.7 | 45.6 |
| Japan | 30.7 | 31.0 | 31.5 | 29.5 | 30.1 | 30.9 | 31.3 | 32.1 | 32.4 | 32.2 |
| Korea | 23.1 | 25.0 | 24.4 | 24.0 | 23.7 | 23.5 | 23.7 | 24.0 | 24.0 | 24.1 |
| Netherlands | 46.2 | 45.3 | 46.1 | 45.0 | 44.1 | 44.8 | 45.0 | 45.0 | 45.0 | 45.3 |
| New Zealand | 35.2 | 33.7 | 33.1 | 31.2 | 30.0 | 29.8 | 30.3 | 30.5 | 31.0 | 31.0 |
| Norway | 58.8 | 58.7 | 59.7 | 56.0 | 56.7 | 56.5 | 56.5 | 56.5 | 56.5 | 56.4 |
| Portugal | 40.5 | 40.9 | 40.7 | 38.8 | 40.4 | 41.5 | 41.7 | 41.7 | 40.3 | 40.2 |
| Singapore | 20.8 | 24.6 | 23.5 | 19.7 | 22.1 | 21.4 | 21.5 | 21.5 | 21.5 | 20.6 |
| Slovak Republic | 33.5 | 32.5 | 32.5 | 34.0 | 30.8 | 31.9 | 32.2 | 32.3 | 32.4 | 32.5 |
| Slovenia | 41.7 | 40.5 | 41.3 | 41.3 | 42.0 | 42.0 | 42.0 | 41.9 | 41.7 | 41.6 |
| Spain | 40.4 | 41.1 | 37.0 | 34.6 | 36.3 | 37.0 | 37.4 | 37.8 | 38.1 | 38.2 |
| Sweden | 53.0 | 52.5 | 51.7 | 51.9 | 51.5 | 52.0 | 52.8 | 54.3 | 54.0 | 53.7 |
| Switzerland | 36.5 | 36.6 | 36.0 | 38.1 | 35.3 | 35.6 | 35.5 | 35.5 | 35.5 | 35.2 |
| United Kingdom | 38.0 | 37.7 | 37.8 | 36.9 | 36.5 | 37.2 | 37.6 | 38.0 | 38.2 | 38.2 |
| United States | 33.8 | 33.9 | 32.4 | 30.4 | 30.3 | 31.5 | 33.1 | 34.0 | 34.8 | 34.9 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 29.9 | 31.5 | 33.4 | 33.9 | 34.6 | 34.6 | 34.8 | 34.9 | 34.9 | 34.9 |
| Brazil | 35.9 | 35.7 | 36.6 | 36.1 | 36.3 | 36.5 | 36.6 | 36.6 | 36.6 | 36.6 |
| Bulgaria | 38.8 | 40.7 | 39.5 | 36.3 | 34.4 | 34.4 | 33.6 | 33.3 | 33.0 | 32.7 |
| Chile | 27.6 | 28.8 | 27.2 | 21.7 | 24.0 | 24.6 | 24.2 | 24.2 | 24.3 | 24.5 |
| China | 18.2 | 19.8 | 19.7 | 20.0 | 19.4 | 19.8 | 20.5 | 21.0 | 21.5 | 21.9 |
| Colombia | 27.2 | 27.2 | 26.6 | 26.7 | 24.8 | 25.3 | 25.4 | 25.6 | 25.7 | 25.8 |
| Estonia | 37.8 | 38.2 | 39.2 | 45.5 | 46.7 | 45.1 | 43.4 | 41.3 | 39.3 | 39.0 |
| Hungary | 42.6 | 44.8 | 45.5 | 45.7 | 44.5 | 43.4 | 42.6 | 42.5 | 42.5 | 42.6 |
| India | 20.2 | 21.8 | 20.0 | 19.8 | 19.6 | 20.4 | 21.0 | 21.3 | 20.9 | 20.5 |
| Indonesia | 20.3 | 18.5 | 20.4 | 15.6 | 15.8 | 15.9 | 16.0 | 16.2 | 16.4 | 16.7 |
| Kenya | 22.2 | 23.1 | 23.3 | 23.7 | 23.9 | 25.2 | 26.1 | 26.6 | 25.7 | 25.2 |
| Latvia | 36.1 | 36.2 | 35.4 | 36.2 | 37.6 | 36.9 | 36.2 | 33.5 | 34.1 | 33.8 |
| Lithuania | 33.4 | 34.0 | 34.3 | 34.4 | 34.1 | 34.2 | 33.8 | 32.9 | 32.3 | 32.4 |
| Malaysia | 25.0 | 25.3 | 25.6 | 27.0 | 25.9 | 26.0 | 26.2 | 26.1 | 26.0 | 25.8 |
| Mexico | 21.4 | 21.4 | 22.9 | 22.2 | 21.9 | 21.9 | 21.8 | 21.7 | 21.4 | 21.2 |
| Nigeria | 33.9 | 28.4 | 32.8 | 19.9 | 25.8 | 26.0 | 26.1 | 26.1 | 26.0 | 25.7 |
| Pakistan | 14.7 | 15.3 | 14.9 | 14.7 | 14.5 | 15.7 | 15.9 | 16.3 | 16.6 | 16.6 |
| Peru | 20.1 | 20.9 | 21.0 | 18.9 | 19.9 | 20.1 | 19.6 | 19.6 | 19.4 | 19.3 |
| Philippines | 16.2 | 15.8 | 15.8 | 14.6 | 15.0 | 15.7 | 16.6 | 17.5 | 17.5 | 17.5 |
| Poland | 40.2 | 40.3 | 39.5 | 37.3 | 39.3 | 39.8 | 40.3 | 40.7 | 40.5 | 40.5 |
| Romania | 32.3 | 32.3 | 32.2 | 31.8 | 32.3 | 32.5 | 32.7 | 32.4 | 31.4 | 30.7 |
| Russia | 39.5 | 39.9 | 38.6 | 34.3 | 34.6 | 35.2 | 35.3 | 35.0 | 34.5 | 34.1 |
| Saudi Arabia | 56.6 | 50.1 | 66.2 | 42.2 | 44.7 | 46.9 | 46.4 | 45.9 | 44.8 | 44.1 |
| South Africa | 27.7 | 28.4 | 29.4 | 27.5 | 27.2 | 27.8 | 28.3 | 28.9 | 29.5 | 30.1 |
| Thailand | 22.3 | 21.5 | 21.4 | 20.8 | 20.9 | 21.1 | 21.5 | 21.6 | 21.7 | 21.8 |
| Turkey | 32.8 | 31.7 | 31.5 | 31.7 | 32.2 | 32.2 | 32.3 | 32.4 | 32.3 | 32.3 |
| Ukraine | 43.2 | 41.8 | 44.3 | 42.2 | 42.8 | 41.8 | 41.8 | 41.8 | 41.8 | 41.8 |
| Average | 32.4 | 32.7 | 32.3 | 30.9 | 30.8 | 31.4 | 32.0 | 32.4 | 32.6 | 32.6 |
| *Advanced* | 37.2 | 37.4 | 36.5 | 35.2 | 35.0 | 35.7 | 36.5 | 37.0 | 37.3 | 37.3 |
| *Emerging* | 25.5 | 26.0 | 26.3 | 24.9 | 24.9 | 25.3 | 25.7 | 25.9 | 25.9 | 26.0 |
| G-7 | 36.9 | 37.0 | 36.2 | 34.8 | 34.5 | 35.4 | 36.3 | 36.9 | 37.3 | 37.3 |
| G-20 | 31.6 | 31.9 | 31.6 | 30.3 | 30.0 | 30.7 | 31.4 | 31.8 | 32.1 | 32.1 |
| *Advanced G-20* | 36.2 | 36.4 | 35.7 | 34.3 | 34.0 | 34.8 | 35.6 | 36.2 | 36.6 | 36.7 |
| *Emerging G-20* | 24.8 | 25.5 | 25.8 | 24.5 | 24.4 | 24.8 | 25.2 | 25.4 | 25.5 | 25.6 |

Sources: October 2010 WEO; and IMF staff calculations.

## Statistical Table 7. General Government Gross Debt
*(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | 9.8 | 9.5 | 11.6 | 17.6 | 21.9 | 23.7 | 24.2 | 23.5 | 22.6 | 21.3 |
| Austria | 62.1 | 59.2 | 62.4 | 67.1 | 70.0 | 72.4 | 74.0 | 75.4 | 76.3 | 77.0 |
| Belgium | 87.3 | 82.8 | 89.7 | 96.8 | 100.2 | 103.1 | 105.0 | 106.1 | 107.1 | 108.2 |
| Canada | 69.4 | 65.1 | 69.8 | 81.6 | 81.7 | 80.5 | 78.8 | 76.7 | 74.3 | 71.6 |
| Czech Republic | 29.4 | 29.0 | 30.0 | 35.3 | 40.1 | 44.4 | 47.9 | 51.1 | 54.1 | 56.9 |
| Denmark | 41.0 | 34.1 | 42.3 | 41.4 | 44.2 | 46.7 | 48.4 | 48.8 | 48.6 | 47.9 |
| Finland | 39.7 | 35.2 | 34.7 | 43.9 | 50.0 | 52.2 | 55.4 | 59.9 | 63.4 | 66.7 |
| France | 63.6 | 63.8 | 67.5 | 78.1 | 84.2 | 87.6 | 89.4 | 90.0 | 89.6 | 88.3 |
| Germany | 67.6 | 64.9 | 66.3 | 73.5 | 75.3 | 76.5 | 77.0 | 77.0 | 76.4 | 75.6 |
| Greece | 97.1 | 95.6 | 99.2 | 115.2 | 130.2 | 139.3 | 143.6 | 144.0 | 139.4 | 133.9 |
| Hong Kong SAR | 1.7 | 1.3 | 1.2 | 1.0 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 |
| Iceland | 30.1 | 29.3 | 71.7 | 99.9 | 115.6 | 107.8 | 101.1 | 94.3 | 85.2 | 75.8 |
| Ireland | 24.8 | 25.0 | 44.4 | 65.5 | 99.4 | 107.8 | 111.6 | 113.7 | 113.9 | 113.9 |
| Israel | 84.3 | 77.7 | 76.7 | 77.6 | 75.7 | 73.7 | 71.3 | 68.7 | 65.7 | 62.7 |
| Italy | 106.5 | 103.5 | 106.1 | 115.8 | 118.4 | 119.7 | 119.7 | 119.7 | 119.4 | 118.8 |
| Japan | 191.3 | 187.7 | 194.7 | 217.6 | 225.8 | 234.1 | 238.6 | 242.9 | 246.2 | 249.1 |
| Korea | 30.1 | 29.7 | 29.0 | 32.6 | 32.1 | 30.5 | 29.0 | 27.2 | 25.5 | 23.9 |
| Netherlands | 47.4 | 45.5 | 58.2 | 61.8 | 66.0 | 69.4 | 72.1 | 74.5 | 76.4 | 78.3 |
| New Zealand | 19.9 | 17.4 | 20.4 | 26.2 | 31.0 | 32.7 | 32.2 | 32.3 | 33.4 | 33.3 |
| Norway | 60.5 | 58.6 | 56.7 | 54.3 | 54.3 | 54.3 | 54.3 | 54.3 | 54.3 | 54.3 |
| Portugal | 63.9 | 62.7 | 65.4 | 76.3 | 83.1 | 87.1 | 90.0 | 91.6 | 94.8 | 97.8 |
| Singapore | 89.6 | 87.9 | 93.4 | 110.0 | 100.4 | 97.1 | 94.2 | 91.5 | 89.0 | 86.7 |
| Slovak Republic | 30.5 | 29.3 | 27.7 | 35.7 | 41.8 | 44.0 | 45.0 | 45.2 | 44.8 | 43.9 |
| Slovenia | 26.7 | 23.3 | 22.5 | 29.4 | 34.5 | 37.2 | 38.1 | 37.7 | 36.8 | 35.6 |
| Spain | 39.6 | 36.1 | 39.7 | 53.1 | 63.5 | 70.2 | 75.1 | 78.6 | 80.6 | 82.0 |
| Sweden | 45.2 | 40.1 | 37.6 | 41.6 | 41.7 | 41.3 | 39.2 | 35.0 | 31.6 | 28.3 |
| Switzerland | 47.2 | 43.6 | 40.9 | 39.0 | 39.5 | 37.8 | 36.5 | 35.9 | 36.2 | 35.9 |
| United Kingdom | 43.1 | 43.9 | 52.1 | 68.5 | 76.7 | 81.9 | 85.1 | 86.1 | 85.5 | 83.9 |
| United States | 61.1 | 62.1 | 71.1 | 84.3 | 92.7 | 99.3 | 102.9 | 105.4 | 107.8 | 110.7 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | 76.6 | 68.0 | 59.7 | 59.0 | 52.2 | 48.1 | 48.0 | 47.8 | 47.8 | 48.9 |
| Brazil | 66.7 | 65.2 | 64.1 | 68.9 | 66.8 | 66.6 | 66.4 | 66.2 | 65.7 | 64.8 |
| Bulgaria | 24.6 | 19.8 | 16.1 | 16.1 | 18.2 | 21.1 | 24.0 | 26.1 | 27.1 | 27.7 |
| Chile | 5.3 | 4.1 | 5.2 | 6.2 | 7.6 | 6.9 | 6.4 | 6.0 | 5.6 | 5.3 |
| China | 16.5 | 19.8 | 16.8 | 18.6 | 19.1 | 18.9 | 18.1 | 17.0 | 15.6 | 14.0 |
| Colombia | 35.7 | 32.5 | 32.3 | 35.2 | 35.7 | 36.3 | 36.8 | 36.5 | 35.6 | 34.6 |
| Estonia | 4.4 | 3.7 | 4.6 | 7.1 | 8.1 | 7.8 | 10.6 | 13.4 | 16.0 | 18.7 |
| Hungary | 65.6 | 65.8 | 72.9 | 78.3 | 78.4 | 78.8 | 79.4 | 80.5 | 81.5 | 82.5 |
| India | 79.1 | 75.7 | 73.7 | 77.7 | 75.1 | 74.0 | 73.6 | 72.7 | 71.4 | 69.6 |
| Indonesia | 40.4 | 36.9 | 33.2 | 28.6 | 26.7 | 26.3 | 25.4 | 24.4 | 23.6 | 22.9 |
| Kenya | 45.4 | 49.1 | 45.6 | 49.2 | 52.1 | 53.3 | 51.5 | 50.8 | 49.5 | 49.1 |
| Latvia | 9.9 | 7.8 | 17.1 | 32.8 | 42.2 | 49.0 | 46.3 | 44.1 | 40.0 | 35.5 |
| Lithuania | 18.0 | 16.9 | 15.6 | 29.5 | 39.5 | 42.3 | 47.8 | 52.0 | 55.1 | 57.4 |
| Malaysia | 43.2 | 42.7 | 42.8 | 55.4 | 55.1 | 56.6 | 57.6 | 58.4 | 58.8 | 59.2 |
| Mexico | 38.3 | 38.2 | 43.3 | 44.9 | 45.1 | 45.7 | 44.9 | 44.3 | 44.0 | 43.7 |
| Nigeria | 11.8 | 12.8 | 11.6 | 15.5 | 16.3 | 16.9 | 14.8 | 13.0 | 11.6 | 10.3 |
| Pakistan | 56.4 | 54.6 | 58.7 | 57.3 | 58.7 | 57.2 | 55.3 | 53.5 | 51.2 | 47.6 |
| Peru | 33.2 | 30.9 | 25.7 | 27.4 | 25.4 | 23.6 | 22.2 | 20.5 | 19.0 | 17.5 |
| Philippines | 55.4 | 47.8 | 48.7 | 48.9 | 46.3 | 45.6 | 45.4 | 43.9 | 42.5 | 38.8 |
| Poland | 47.7 | 45.0 | 47.1 | 50.9 | 55.2 | 57.4 | 59.5 | 60.4 | 61.0 | 60.9 |
| Romania | 18.4 | 19.8 | 21.3 | 29.9 | 35.5 | 37.7 | 37.3 | 36.3 | 35.3 | 33.2 |
| Russia | 9.0 | 8.5 | 7.8 | 10.9 | 11.1 | 12.9 | 14.5 | 15.6 | 15.0 | 14.6 |
| Saudi Arabia | 27.3 | 18.5 | 13.2 | 16.0 | 12.9 | 11.0 | 9.4 | 8.2 | 7.2 | 6.3 |
| South Africa | 32.6 | 28.3 | 27.2 | 30.8 | 35.0 | 38.1 | 39.7 | 39.3 | 38.1 | 35.1 |
| Thailand | 42.0 | 38.3 | 37.3 | 45.2 | 45.5 | 45.5 | 45.3 | 45.3 | 45.2 | 44.8 |
| Turkey | 46.1 | 39.4 | 39.5 | 45.5 | 43.4 | 42.4 | 41.2 | 40.7 | 39.9 | 38.8 |
| Ukraine | 14.8 | 12.3 | 20.0 | 34.6 | 39.5 | 40.6 | 41.9 | 40.3 | 38.3 | 33.8 |
| Average | 58.5 | 57.7 | 60.6 | 68.9 | 72.5 | 75.2 | 76.5 | 77.2 | 77.4 | 77.5 |
| *Advanced* | 73.8 | 72.8 | 78.9 | 91.0 | 97.4 | 102.0 | 104.4 | 106.0 | 107.1 | 108.2 |
| *Emerging* | 36.9 | 36.2 | 34.8 | 37.7 | 37.4 | 37.3 | 37.0 | 36.4 | 35.4 | 34.2 |
| G-7 | 82.7 | 82.2 | 89.1 | 102.8 | 109.7 | 115.0 | 117.8 | 119.7 | 121.1 | 122.5 |
| G-20 | 61.3 | 60.8 | 63.8 | 72.6 | 76.1 | 78.8 | 80.2 | 80.9 | 81.2 | 81.4 |
| *Advanced G-20* | 78.4 | 77.8 | 84.3 | 97.3 | 103.8 | 108.7 | 111.2 | 112.9 | 114.1 | 115.4 |
| *Emerging G-20* | 36.9 | 36.5 | 34.5 | 37.0 | 36.3 | 36.0 | 35.6 | 35.0 | 33.9 | 32.7 |

Sources: October 2010 WEO; and IMF staff calculations.

## Statistical Table 8. General Government Net Debt
### *(Percent of GDP)*

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Advanced Economies** | | | | | | | | | | |
| Australia | -6.4 | -7.4 | -5.4 | 0.1 | 5.4 | 7.6 | 8.1 | 7.7 | 7.0 | 6.0 |
| Austria | 51.0 | 48.7 | 52.3 | 56.7 | 59.9 | 62.6 | 64.6 | 66.3 | 67.5 | 68.5 |
| Belgium | 77.3 | 73.3 | 74.0 | 86.6 | 91.4 | 94.4 | 96.5 | 97.7 | 98.8 | 100.1 |
| Canada | 26.2 | 23.1 | 22.4 | 29.0 | 32.2 | 33.5 | 34.0 | 34.0 | 33.3 | 32.2 |
| Czech Republic | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Denmark | 1.9 | -3.8 | -6.7 | -4.5 | 0.3 | 4.6 | 8.0 | 10.0 | 11.2 | 11.9 |
| Finland | -69.5 | -72.6 | -52.4 | -50.0 | -40.7 | -35.8 | -29.5 | -22.0 | -15.4 | -9.2 |
| France | 53.9 | 54.1 | 57.8 | 68.4 | 74.5 | 77.9 | 79.7 | 80.3 | 79.9 | 78.6 |
| Germany | 52.7 | 50.1 | 49.7 | 55.9 | 58.7 | 60.4 | 61.4 | 61.8 | 61.7 | 61.7 |
| Greece | … | … | … | … | … | … | … | … | … | … |
| Hong Kong SAR | … | … | … | … | … | … | … | … | … | … |
| Iceland | 7.8 | 11.0 | 42.1 | 67.7 | 75.6 | 78.6 | 74.7 | 64.5 | 58.6 | 51.8 |
| Ireland | 12.2 | 12.2 | 23.0 | 36.4 | 69.4 | 77.3 | 81.9 | 84.8 | 85.8 | 85.5 |
| Israel | 79.5 | 72.9 | 72.0 | 72.9 | 71.0 | 69.0 | 66.6 | 64.0 | 60.9 | 58.0 |
| Italy | 89.7 | 87.2 | 89.0 | 96.8 | 99.0 | 100.1 | 100.1 | 100.1 | 100.0 | 99.5 |
| Japan | 84.3 | 81.5 | 94.9 | 111.6 | 120.7 | 129.5 | 135.9 | 142.2 | 147.8 | 153.4 |
| Korea | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Netherlands | 33.0 | 30.6 | 34.6 | 41.0 | 45.8 | 49.7 | 53.0 | 55.9 | 58.4 | 60.7 |
| New Zealand | 0.2 | -5.7 | -4.8 | -1.2 | 3.2 | 7.6 | 10.4 | 12.0 | 13.2 | 13.3 |
| Norway | -136.3 | -142.5 | -126.1 | -148.8 | -152.3 | -157.6 | -162.0 | -167.1 | -172.9 | -178.1 |
| Portugal | 58.8 | 58.1 | 61.1 | 72.1 | 78.9 | 82.9 | 85.7 | 87.3 | 90.6 | 93.6 |
| Singapore | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Slovak Republic | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Slovenia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Spain | 30.5 | 26.5 | 30.4 | 43.7 | 54.1 | 60.9 | 65.7 | 69.2 | 71.2 | 72.6 |
| Sweden | -13.9 | -17.1 | -11.8 | -15.7 | -12.7 | -10.7 | -10.4 | -11.9 | -12.9 | -13.9 |
| Switzerland | 46.9 | 43.3 | 39.0 | 37.3 | 37.8 | 36.1 | 34.9 | 34.3 | 34.6 | 34.4 |
| United Kingdom | 38.0 | 38.2 | 45.6 | 61.0 | 68.8 | 74.0 | 77.3 | 78.2 | 77.6 | 76.0 |
| United States | 41.9 | 42.4 | 47.6 | 58.8 | 65.8 | 72.7 | 76.2 | 78.8 | 81.5 | 84.7 |
| **Emerging Economies** | | | | | | | | | | |
| Argentina | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Brazil | 47.0 | 45.1 | 37.9 | 42.3 | 36.7 | 35.5 | 34.6 | 33.4 | 32.0 | 30.8 |
| Bulgaria | -11.0 | -10.9 | -11.1 | -10.3 | -5.6 | 3.3 | 10.9 | 18.5 | 24.3 | 30.2 |
| Chile | -1.7 | -9.9 | -17.5 | -11.4 | -9.9 | -9.7 | -9.8 | -9.7 | -9.7 | -9.3 |
| China | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Colombia | 25.2 | 22.5 | 22.4 | 26.3 | 28.3 | 29.3 | 30.3 | 30.4 | 29.9 | 29.3 |
| Estonia | -4.9 | -5.6 | -3.3 | -1.3 | -0.2 | 1.5 | 4.7 | 7.7 | 10.6 | 13.5 |
| Hungary | 62.6 | 62.4 | 63.9 | 69.7 | 70.9 | 71.7 | 72.7 | 74.1 | 75.5 | 76.8 |
| India | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Indonesia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Kenya | 40.7 | 44.4 | 40.6 | 44.0 | 46.8 | 47.9 | 46.3 | 45.5 | 44.2 | 43.8 |
| Latvia | 7.4 | 4.7 | 11.3 | 21.5 | 34.3 | 40.6 | 40.6 | 38.8 | 36.2 | 33.8 |
| Lithuania | 11.0 | 11.2 | 12.8 | 23.4 | 33.2 | 35.5 | 40.2 | 43.7 | 46.3 | 48.2 |
| Malaysia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Mexico | 32.4 | 31.4 | 35.7 | 39.1 | 39.6 | 40.3 | 39.9 | 39.5 | 39.4 | 39.4 |
| Nigeria | -6.2 | 5.0 | 0.1 | 9.2 | 12.3 | 13.0 | 10.4 | 7.4 | 5.2 | 5.9 |
| Pakistan | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Peru | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Philippines | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Poland | 22.4 | 17.0 | 17.2 | 22.2 | 25.9 | 28.2 | 30.3 | 31.2 | 31.8 | 31.7 |
| Romania | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Russia | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Saudi Arabia | 1.7 | -17.1 | -45.8 | -50.3 | -42.1 | -41.4 | -41.4 | -40.8 | -40.9 | -41.8 |
| South Africa | 29.7 | 24.8 | 23.3 | 26.7 | 31.1 | 34.6 | 36.5 | 36.4 | 35.5 | 32.9 |
| Thailand | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Turkey | 38.5 | 32.2 | 32.8 | 37.9 | 35.7 | 34.6 | 33.3 | 32.6 | 31.6 | 30.3 |
| Ukraine | 11.1 | 9.6 | 18.4 | 33.6 | 38.6 | 39.8 | 41.2 | 39.7 | 37.8 | 33.3 |
| Average | 43.2 | 41.6 | 45.2 | 54.5 | 59.8 | 64.2 | 66.6 | 68.4 | 69.7 | 71.1 |
| *Advanced* | 46.3 | 45.3 | 50.4 | 60.9 | 67.3 | 72.6 | 75.6 | 77.8 | 79.7 | 81.5 |
| *Emerging* | 29.5 | 26.0 | 22.7 | 27.0 | 27.3 | 27.8 | 27.7 | 27.4 | 26.8 | 26.0 |
| G-7 | 51.9 | 51.3 | 56.7 | 68.1 | 74.5 | 80.2 | 83.4 | 85.8 | 87.8 | 89.9 |
| G-20 | 47.9 | 46.6 | 50.4 | 60.3 | 65.5 | 70.2 | 72.8 | 74.7 | 76.2 | 77.7 |
| *Advanced G-20* | 50.3 | 49.6 | 54.9 | 66.1 | 72.5 | 78.1 | 81.2 | 83.5 | 85.4 | 87.5 |
| *Emerging G-20* | 35.2 | 30.7 | 26.1 | 29.2 | 28.2 | 28.2 | 27.7 | 27.1 | 26.3 | 25.3 |

Sources: October 2010 WEO; and IMF staff calculations.

# Glossary

**Automatic stabilizers.** Change in the cyclical balance.

**CDS spreads.** The spread on credit default swap (CDS) refers to the annual amount (in bps of the notional amount) that the protection buyer must pay the seller over the length of the contract to protect the underlying asset against a credit event.

**Cyclical balance.** Cyclical component of the overall fiscal balance, computed as the difference between cyclical revenues and cyclical expenditure. The latter are typically computed using country-specific elasticities of aggregate revenue and expenditure series with respect to the output gap. Where unavailable, standard elasticities (0,1) are assumed for expenditure and revenue, respectively.

**Cyclically adjusted balance (CAB).** Overall balance minus cyclical balance.

**Cyclically adjusted (CA) expenditure and revenue.** Revenue and expenditure adjusted for the effect of the economic cycle (i.e., net of cyclical revenue and expenditure).

**CA primary balance (CAPB).** Cyclically adjusted balance excluding net interest payments.

**Expenditure elasticity.** Elasticity of expenditure with respect to the output gap.

**Fiscal stimulus.** Discretionary fiscal policy actions adopted in response to the financial crisis.

**General government.** The general government sector consists of all government units and all nonmarket, nonprofit institutions that are controlled and mainly financed by government units comprising the central, state, and local governments. The general government sector does not include public corporations or quasi-corporations.

**Gross debt.** All liabilities that require future payment of interest and/or principal by the debtor to the creditor. This includes debt liabilities in the form of SDRs, currency and deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes, and other accounts payable. The term "public debt" is used in this Monitor, for simplicity, as synonymous with gross debt of the general government, unless otherwise specified. (Strictly speaking, the term "public debt" refers to the debt of the public sector as a whole, which includes financial and nonfinancial public enterprises and the central bank.)

**Gross financing needs.** Overall new borrowing requirement plus debt maturing during the year.

**Net debt.** Gross debt minus financial assets, including those held by the broader public sector: for example, social security funds held by the relevant component of the public sector, in some cases.

**Output gap.** Deviation of actual GDP from potential GDP, in percent of potential GDP.

**Overall fiscal balance (also "headline" fiscal balance).** Net lending/borrowing, defined as the difference between revenue and total expenditure, using the 2001 edition of the IMF's Government Finance Statistics Manual (GFSM 2001). Does not include policy lending. For some

countries, the overall balance continues to be based on GFSM 1986, which is defined as total revenue and grants minus total expenditure and net lending.

**Primary balance.** Overall balance excluding net interest payment (interest expenditure minus interest revenue).

**Public debt.** See gross debt.

**Public sector.** The public sector consists of the general government sector plus government-controlled entities, known as public corporations, whose primary activity is to engage in commercial activities.

**RAS spreads.** Relative Asset Swap (RAS) spreads measure the difference between benchmark government bond yields and the interest rate on the fixed-rate arm of an interest rate swap in the same currency and of the same maturity (usually 10 years) as the bond.

**Revenue elasticity.** Elasticity of revenue with respect to the output gap.

## Appendix Table 1. Advanced Economies: Needed Fiscal Adjustment—An Illustrative Scenario (Gross Debt Target)

*(Percent of GDP)*

| | Current WEO Projections, 2010 | | | Illustrative Fiscal Adjustment Strategy to Achieve Debt Target in 2030 | |
|---|---|---|---|---|---|
| | Gross Debt | Primary Balance | Cyclially Adjusted PB | Cyclically Adjusted PB in 2020-30 | Required Adjustment betw een 2010 and 2020 |
| Australia | 21.9 | -4.3 | -4.1 | 0.3 | 4.4 |
| Austria | 70.0 | -2.9 | -2.4 | 2.1 | 4.5 |
| Belgium | 100.2 | -1.1 | 0.2 | 4.4 | 4.2 |
| Canada | 81.7 | -4.5 | -3.0 | 2.5 | 5.5 |
| Czech Republic | 40.1 | -3.9 | -3.1 | 1.2 | 4.3 |
| Denmark | 44.2 | -4.3 | -2.9 | 1.2 | 4.1 |
| Finland | 50.0 | -4.7 | -2.1 | 1.0 | 3.1 |
| France | 84.2 | -5.8 | -4.3 | 3.2 | 7.5 |
| Germany | 75.3 | -2.2 | -1.0 | 2.0 | 3.0 |
| Greece[1] | 130.2 | -2.2 | -1.5 | 6.4 | 8.0 |
| Hong Kong SAR | 0.6 | 1.5 | -1.0 | -0.4 | 0.7 |
| Iceland | 115.6 | -2.7 | 8.7 | 2.4 | -6.2 |
| Ireland | 99.4 | -29.3 | -6.6 | 5.3 | 11.9 |
| Israel | 75.7 | -0.5 | -0.5 | 1.1 | 1.6 |
| Italy | 118.4 | -0.8 | 0.7 | 4.5 | 3.8 |
| Japan[1] | 225.8 | -8.2 | -6.5 | 6.4 | 13.0 |
| Korea | 32.1 | 2.8 | 2.9 | -0.6 | -3.6 |
| Netherlands | 66.0 | -4.2 | -3.9 | 2.2 | 6.1 |
| New Zealand | 31.0 | -3.1 | -1.9 | 0.4 | 2.3 |
| Norw ay[1] | 54.3 | 8.6 | 9.4 | 9.4 | 0.0 |
| Portugal | 83.1 | -4.1 | -3.0 | 3.0 | 6.0 |
| Singapore | 100.4 | 1.7 | 0.0 | 2.9 | 2.9 |
| Slovak Republic | 41.8 | -6.8 | -5.9 | 0.9 | 6.8 |
| Slovenia | 34.5 | -4.5 | -2.8 | 0.6 | 3.4 |
| Spain | 63.5 | -7.5 | -5.9 | 2.5 | 8.4 |
| Sw eden | 41.7 | -3.2 | -0.7 | 0.3 | 1.0 |
| Sw itzerland | 39.5 | 0.1 | 0.8 | 0.0 | -0.8 |
| United Kingdom | 76.7 | -7.6 | -5.6 | 3.2 | 8.8 |
| United States[1] | 92.7 | -9.5 | -6.8 | 4.8 | 11.6 |
| *Average (PPP-weighted)* | 97.3 | -6.4 | -4.5 | 3.8 | 8.3 |
| *G-20* | 103.8 | -6.9 | -4.9 | 4.0 | 8.9 |
| *Higher Debt* | 106.0 | -7.2 | -5.1 | 4.2 | 9.3 |
| *Lower Debt* | 32.5 | -0.5 | 0.0 | 0.6 | 0.6 |

Sources: October 2010 WEO; and IMF staff estimates.

Notes: The table reports gross debt; for some countries with sizable assets, net debt is considerably smaller. CA primary balances are reported in percent of nominal GDP (in contrast to the conventional definition in percent of potential GDP). General government data are used where available. In the illustrative fiscal adjustment strategy, the CAPB is assumed to improve in line with WEO projections in 2011-12 and gradually from 2013 until 2020; thereafter, it is maintained constant until 2030. The last column shows the CAPB adjustment needed to stabilize debt at the end-2012 level by 2030 if the respective debt-to-GDP ratio is less than 60 percent (no shading, "lower debt"); or to bring the debt ratio to 60 percent in 2030 (shaded entries, "higher debt"). The analysis is illustrative and makes some simplifying assumptions: in particular, up to 2015, an interest rate–growth rate differential of 0 percentage point is assumed, broadly in line with WEO assumptions, and 1 percentage point afterward regardless of country-specific circumstances.

[1]Data for Greece are based on the assumption that adjustment amounting to 7.6 percent of GDP (as in the authorities' program) is implemented in 2010. Illustrative scenarios for Japan are based on its net debt, and assume a target of 80 percent of GDP, which corresponds to a target of 200 percent of GDP for gross debt. For Norway, maintenance of primary surpluses at their projected 2012 level is assumed (primary balance includes oil revenue whereas elsewhere in this document the non-oil balance is shown). For the United States, the CAPB excludes financial sector support recorded above the line.

## Appendix Table 2. Emerging Economies: Needed Fiscal Adjustment—An Illustrative Scenario (Gross Debt Target)

*(Percent of GDP)*

| | Current WEO Projections, 2010 | | | Illustrative Fiscal Adjustment Strategy to Achieve Debt Target in 2030 | |
|---|---|---|---|---|---|
| | Gross Debt | Primary Balance | Cyclically Adjusted PB | Cyclically Adjusted PB in 2020-30 | Required Adjustment between 2010 and 2020 |
| Argentina | 52.2 | -0.1 | -0.1 | 1.0 | 1.1 |
| Brazil | 66.8 | 3.3 | 3.2 | 1.5 | -1.7 |
| Bulgaria | 18.2 | -4.6 | -2.5 | 0.9 | 3.4 |
| Chile | 7.6 | -1.6 | -4.1 | 0.5 | 4.6 |
| China | 19.1 | -2.4 | -2.6 | 0.4 | 3.0 |
| Colombia | 35.7 | -1.5 | -1.3 | 0.6 | 1.9 |
| Estonia | 8.1 | -0.9 | 2.4 | 0.7 | -1.7 |
| Hungary | 78.4 | -0.5 | 2.5 | 3.4 | 0.8 |
| India | 75.1 | -4.5 | -3.7 | 3.3 | 7.0 |
| Indonesia | 26.7 | 0.1 | 0.3 | 0.2 | -0.1 |
| Kenya | 52.1 | -4.3 | -3.5 | 1.3 | 4.8 |
| Latvia | 42.2 | -10.5 | -6.4 | 0.3 | 6.6 |
| Lithuania | 39.5 | -6.1 | -4.5 | 2.1 | 6.6 |
| Malaysia | 55.1 | -2.9 | -3.9 | 2.7 | 6.6 |
| Mexico | 45.1 | -1.7 | -1.0 | 0.9 | 1.9 |
| Nigeria | 16.3 | -6.3 | -5.9 | 0.5 | 6.4 |
| Pakistan | 58.7 | -1.8 | -1.8 | 1.0 | 2.8 |
| Peru | 25.4 | 0.3 | -0.7 | 0.1 | 0.8 |
| Philippines | 46.3 | -0.6 | -0.7 | 0.7 | 1.4 |
| Poland | 55.2 | -4.5 | -4.3 | 2.5 | 6.8 |
| Romania | 35.5 | -5.1 | -2.7 | 0.4 | 3.1 |
| Russia | 11.1 | -4.3 | -2.5 | 0.6 | 3.0 |
| Saudi Arabia[1] | 12.9 | 2.1 | 3.0 | 6.5 | 3.5 |
| South Africa | 35.0 | -3.2 | -2.6 | 0.2 | 2.8 |
| Thailand | 44.6 | -1.9 | -1.8 | 0.9 | 2.8 |
| Turkey | 43.4 | 0.1 | -0.7 | 0.2 | 0.9 |
| Ukraine[1] | 39.5 | -4.0 | -0.9 | 0.5 | 1.4 |
| *Average (PPP-weighted)* | 37.4 | -2.1 | -1.8 | 1.2 | 3.0 |
| *G-20* | 36.3 | -2.0 | -1.7 | 1.2 | 2.9 |

Sources: October 2010 WEO; and IMF staff estimates.

Notes: In computing the primary balance, policy lending was excluded from primary expenditure. CA primary balances are reported in percent of nominal GDP. In the illustrative fiscal adjustment strategy, the CAPB is assumed to improve in line with WEO projections in 2011–12 and gradually from 2013 until 2020; thereafter, the CAPB is maintained constant until 2030. The last column shows the CAPB adjustment needed to stabilize debt at the end-2012 level by 2030 if the respective debt-to-GDP ratio is less than 40 percent; or to bring the debt-to-GDP ratio to 40 percent in 2030. The analysis is illustrative and makes some simplifying assumptions: in particular, up to 2015, an interest rate–growth rate differential of 0 percentage point is assumed, broadly in line with WEO assumptions, and 1 percentage point afterward regardless of country-specific circumstances. For large commodity producing countries, even larger fiscal balances might be called for in the medium term than shown in the illustrative scenario given the high volatility of revenues and the exhaustibility of natural resources.

[1]For Saudi Arabia, maintenance of primary surpluses at their projected 2012 level is assumed. For the Ukraine, the primary deficit excludes costs related to bank recapitalization and gas utility.

## Appendix Table 3. Advanced Economies: Illustrative Fiscal Adjustment (Net Debt Target)

*(Percent of GDP)*

| | 2007 | | 2010 | | | Required Adjustment between 2010 and 2020 | | Difference | |
|---|---|---|---|---|---|---|---|---|---|
| | Net Debt | Gross Debt | Net Debt | Gross Debt | Cyclically Adjusted Primary Balance | With Net Debt | With Gross Debt | Assets-to-GDP ratio (Gross minus Net Debt) | Req adj (Gross Debt) minus Req adj (Net Debt) |
| Australia | -7.4 | 9.5 | 5.4 | 21.9 | -4.1 | 4.2 | 4.4 | 16.5 | 0.2 |
| Austria | 48.7 | 59.2 | 59.9 | 70.0 | -2.4 | 4.8 | 4.5 | 10.1 | -0.3 |
| Belgium | 73.3 | 82.8 | 91.4 | 100.2 | 0.2 | 4.5 | 4.2 | 8.8 | -0.3 |
| Canada | 23.1 | 65.1 | 32.2 | 81.7 | -3.0 | 3.8 | 5.5 | 49.5 | 1.7 |
| Czech Republic | … | … | … | … | … | … | … | … | … |
| Denmark | -3.8 | 34.1 | 0.3 | 44.2 | -2.9 | 3.7 | 4.1 | 43.9 | 0.4 |
| Finland | -72.6 | 35.2 | -40.7 | 50.0 | -2.1 | 2.2 | 3.1 | 90.7 | 0.9 |
| France | 54.1 | 63.8 | 74.5 | 84.2 | -4.3 | 7.7 | 7.5 | 9.7 | -0.2 |
| Germany | 50.1 | 64.9 | 58.7 | 75.3 | -1.0 | 2.9 | 3.0 | 16.7 | 0.2 |
| Greece[1] | … | … | … | … | … | … | … | … | … |
| Hong Kong | … | … | … | … | … | … | … | … | … |
| Iceland | 11.0 | 29.3 | 75.6 | 115.6 | 8.7 | -7.2 | -6.2 | 39.9 | 1.0 |
| Ireland | 12.2 | 25.0 | 69.4 | 99.4 | -6.6 | 10.6 | 11.9 | 30.0 | 1.2 |
| Israel | 72.9 | 77.7 | 71.0 | 75.7 | -0.5 | 2.2 | 1.6 | 4.7 | -0.6 |
| Italy | 87.2 | 103.5 | 99.0 | 118.4 | 0.7 | 3.3 | 3.8 | 19.4 | 0.5 |
| Japan[1] | 81.5 | 187.7 | 120.7 | 225.8 | -6.5 | 13.0 | 13.0 | 105.1 | 0.0 |
| Korea | … | … | … | … | … | … | … | … | … |
| Netherlands | 30.6 | 45.5 | 45.8 | 66.0 | -3.9 | 5.6 | 6.1 | 20.2 | 0.5 |
| New Zealand | -5.7 | 17.4 | 3.2 | 31.0 | -1.9 | 2.1 | 2.3 | 27.9 | 0.2 |
| Norway[1] | -142.5 | 58.6 | -152.3 | 54.3 | 9.4 | 0.0 | 0.0 | 206.6 | 0.0 |
| Portugal | 58.1 | 62.7 | 78.9 | 83.1 | -3.0 | 6.7 | 6.0 | 4.2 | -0.7 |
| Singapore | … | … | … | … | … | … | … | … | … |
| Slovak Republic | … | … | … | … | … | … | … | … | … |
| Slovenia | … | … | … | … | … | … | … | … | … |
| Spain | 26.5 | 36.1 | 54.1 | 63.5 | -5.9 | 8.7 | 8.4 | 9.4 | -0.3 |
| Sweden | -17.1 | 40.1 | -12.7 | 41.7 | -0.7 | 0.5 | 1.0 | 54.5 | 0.5 |
| Switzerland | 43.3 | 43.6 | 37.8 | 39.5 | 0.8 | -0.8 | -0.8 | 1.7 | 0.0 |
| United Kingdom | 38.2 | 43.9 | 68.8 | 76.7 | -5.6 | 9.2 | 8.8 | 7.8 | -0.4 |
| United States[1] | 42.4 | 62.1 | 65.8 | 92.7 | -6.8 | 10.5 | 11.6 | 27.0 | 1.0 |
| *Average (PPP-weighted)* | 45.3 | 75.4 | 67.3 | 101.2 | -4.9 | 8.4 | 8.9 | 33.9 | 0.5 |
| *G-20* | 49.6 | 80.0 | 72.5 | 107.1 | -5.2 | 8.9 | 9.5 | 34.6 | 0.6 |
| *Median:* | 46.2 | 64.3 | 67.3 | 82.9 | -4.2 | 6.0 | 6.5 | 18.0 | 0.2 |
| *Higher Debt* | 51.1 | 79.3 | 74.8 | 106.8 | -5.2 | 9.0 | 9.5 | 32.0 | 0.5 |
| *Lower Debt* | -5.5 | 42.1 | 2.2 | 52.4 | -1.7 | 2.8 | 3.5 | 50.1 | 0.8 |

Sources: October 2010 WEO; and IMF staff estimates.

Notes: Net debt simulations assume a target of 45 percent of GDP, broadly in line with the pre-crisis (2007) median in advanced G-20 countries or to stabilize debt at the end-2012 level by 2030 if the net debt-to-GDP ratio is less than 45 percent. For gross debt simulations, see notes to Appendix Table 1. The methodology for computing the required adjustment is described in the notes for Appendix Table 1 (shading corresponds to countries with "higher debt"). The country averages differ slightly from those depicted in Appendix Table 1 because the country sample here is smaller on account of missing data.

[1] For Japan, net debt is used for all scenarios, with a constant target of 80 percent (this corresponds to a gross debt target of 200 percent of GDP). For Greece (not shown), the illustrative required adjustment from 2011 to 2020 is 8.0 percent of GDP; this is premised on adjustment measures of 7.6 percent of GDP (as in the authorities' program) being implemented in 2010. For Norway, maintenance of primary surpluses at their projected 2012 level is assumed (primary balance includes oil revenue whereas elsewhere in this document the non-oil balance is shown). For the United States, the CAPB excludes financial sector support recorded above the line.

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