FOR

AGENDA

SM/10/275

October 12, 2010

To: Members of the Executive Board

From: The Secretary

Subject: **Fiscal Monitor—Fiscal Exit: From Strategy To Implementation**

Attached for consideration by the Executive Directors is the draft November 2010 edition of the Fiscal Monitor, entitled "Fiscal Exit: From Strategy to Implementation," which is tentatively scheduled for discussion on **Friday, October 29, 2010**.

The staff proposes the publication of this paper after the Executive Board completes its discussion, together with a PIN summarizing the Executive Board's discussion.

Questions may be referred to Mr. Gerson (ext. 37729) and Mr. Kumar (ext. 37771) in FAD.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

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FISCAL MONITOR

NOVEMBER 2010

Fiscal Exit: From Strategy to Implementation

Prepared by the Staff of the Fiscal Affairs Department

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MAIN THEMES IN THIS FISCAL MONITOR

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 I 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 *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—but owe much to improved economic conditions: the cyclically adjusted balance, which discounts changes due to 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 should let the fiscal stabilizers operate and slow the pace of adjustment, if market conditions allow. The pace of adjustment varies significantly across countries, with country differences explained primarily by the initial level of the deficit.

Chapter II 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 III 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 they will gradually reduce their medium-term deficits, with plans typically through 2013. The overall pace of underlying adjustment envisaged is broadly appropriate, although in some cases plans are based on growth projections that are more optimistic than other forecasts. 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, none 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 uncertain the ultimate fiscal strategy goal.

Chapter IV, 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.

The *Monitor* concludes with a chapter exploring four topical fiscal policy questions:

- What is the growth impact of various reforms to address long-term pension spending? One conclusion is that a two-year increase in the retirement age—which is what would be needed to offset projected spending increases over the next two decades—would on average increase GDP by 1 percentage point in the short to medium run, and by 4½ percentage points over the long run.

- 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.

- 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.

- How can revenues from value-added taxes be increased to support consolidation? Advanced economies should concentrate on eliminating preferential rates, emerging economies on improving compliance.

I. Fiscal Developments and Near-term Outlook

A. Fiscal Developments in 2010: The Beginning of the Fiscal Exit

1.   **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; Figure 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.

2.   **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 8 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. Reflecting primarily fiscal stimulus measures provided this year (Box 1) larger deficits are expected in many major economies (France, Germany and, excluding financial sector support, the United States). In some of these economies, including the United States, 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]

- 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, Spain). 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 multi-year tightening measures adopted in June, including further expenditure cuts for 2010, will allow the deficit to remain 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

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[1] 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. Fiscal Balances, 2007–11
(Percent of PPP-weighted GDP)

	2007	2008	2009	Projections 2010	2011	Difference from 2010 May *Fiscal Monitor* 2009	2010	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
Cyclically Adjusted Balance[1]								
Advanced economies	-1.5	-3.3	-5.7	-6.1	-5.2	0.2	0.5	0.4
United States[2]	-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[2]	-1.1	-3.4	-7.9	-7.9	-6.7	-0.1	0.3	-0.1
United States[2]	-2.7	-5.9	-10.4	-10.7	-9.5	-0.4	-0.1	-1.4

Source: October 2010 *WEO*, computed using fixed 2009 PPP-GDP weights.
[1] Percent of potential GDP.
[2] Excluding financial sector support in the United States.

Box 1. Update on Crisis-Related Discretionary Fiscal Stimulus in the G-20 Economies[1]

	Update 2009	2010	2011	Comment
Argentina	4.7	1.4	…	2009 estimates higher, due to higher (mostly capital) spending impulse; 2010 estimate includes mostly soft credit lines to promote investment, together with some revenue-enhancing measures.
Australia	2.7	1.7	1.3	The lower 2009 and 2010 estimates are due to a slower implementation of investment categories within the stimulus package.
Brazil	0.7	0.6	0.0	Policy lending to the national development bank, recorded below the line, continues to be significant (3.2 and 2.2 percent of GDP in 2009 and 2010).
Canada	1.8	1.7	0.0	No change in stimulus from earlier estimates. Data are on a fiscal year basis.
China	3.1	2.7	…	No change in stimulus from earlier estimates.
France	1.2	1.1	0.0	2009 estimates higher, due to a greater use of tax benefits and revision to GDP estimates; 2010 higher 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	The revisions reflect additional information on the cost of stimulus measures and a revised profile for investment due to implementation lags.
India	0.5	0.3	0.0	2009 stimulus estimates lower due to upward revision of GDP; the 2010 estimates lower, as the 2010/11 budget reversed half the reduction in indirect taxes taken as part of the stimulus and upward revision of GDP forecasts.
Indonesia	1.4	0.0	0.2	For 2010 continued fiscal stimulus was budgeted, but recent budget execution data point to under-spending and a neutral fiscal stance. The proposed 2011 budget contains a small fiscal impulse.
Italy	0.0	0.0	0.0	The lower 2010 stimulus estimate reflects changes in GDP forecast.
Japan	2.8	2.2	1.0	2011 reflects the authorities' medium-term fiscal framework (announced in June 2010). (Does not include the new fiscal stimulus package announced on October 8).
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	Higher 2010 stimulus reflects the reclassifications of transfers to the pension fund (3.2 percent of GDP) as "anti-crisis" measures; and higher spending in supplementary June budget. Much of the 2010 fiscal stimulus is permanent, thus carrying over to 2011 compared to the pre-crisis baseline.
Saudi Arabia	5.4	4.0	0.0	2009 estimates higher as capital spending was higher than budgeted; in 2010 capital spending is again higher than expected.
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 for 2010 reflects the new June 2010 budget, mainly due to spending cuts.
United States	1.8	2.9	1.7	Data include both legislated stimulus and economic support envisaged in the FY2011 Mid-Session Review. President Obama's September proposals for further stimulus are not included. The estimates of stimulus are subject to a considerable downward risk since many of the planned measures are still pending in Congress.
G-20 Average[2]	2.1	2.1	0.9	
Advanced	1.9	2.1	1.1	
Emerging	2.4	2.0	0.5	

Sources: Survey of IMF G-20 desks; national budget documents and medium-term fiscal plans.
Note: "…" denotes data are not available.
[1]Relative to pre-crisis baseline (see also May 2010 *Fiscal Monitor*, Appendix I; and November 2009 *Fiscal Monitor*, Annex Table 2). A complete stimulus withdrawal shows as zero. Discretionary tightening is not shown in this table.
[2]PPP-GDP weighted.

implies a lower cyclically adjusted deficit than estimated earlier, with implications for future fiscal projections and risks (Chapter IV).[2]

Figure 1. Evolution of Fiscal Balances, 2005–11
(Percent of GDP)
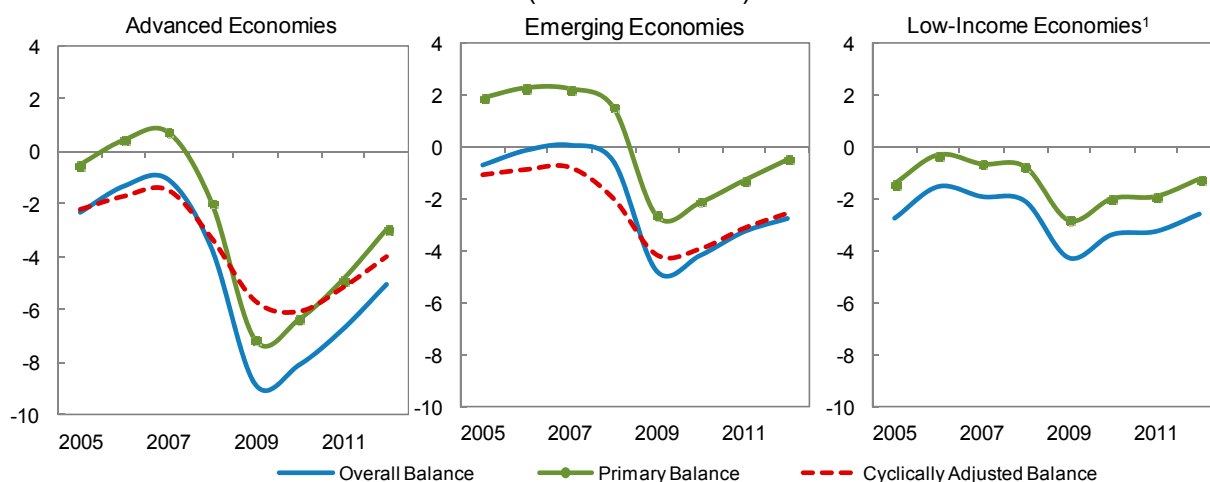
Source: October 2010 *WEO* and IMF staff calculations.
[1] Cyclically adjusted data not available for several countries.

3.   **In emerging economies, the economic recovery and, to a lesser extent, tightening measures and lower interest payments are leading to a widespread albeit still relatively contained decline in the fiscal deficit**. 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; Figure 1):

- 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, 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.

- In emerging Asia, fiscal deficits are declining 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 to be in place.

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[2] The U.S. potential GDP level has been revised upwards which has made the output gap more negative. As a result, the cyclically adjusted deficit has been revised by 1 percent of GDP in 2010 for the United States and by ½ percent of GDP for the advanced country average.

- In emerging Europe, fiscal developments are more diverse. The overall decline in the deficit is largely driven by the strengthening of Russia's fiscal position, even though the improvement is smaller than projected earlier due to 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).

- Overall, for emerging economies, the improvement in the fiscal balances is still mostly driven by the economic recovery, as the CAB improves only marginally (¼ percentage point of GDP) compared to 2009.

4. **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:

- In sub-Saharan Africa, the overall balance is expected to improve in 2010 by ¾ percentage point. The tightening reflects partly expenditure measures, including from 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.

- 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.

- 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).

5. **Fiscal balances of oil producers have also strengthened, given higher oil prices in 2010 and fiscal tightening measures in some countries** (Russia, 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 Russia and Saudi Arabia.

B. Outlook for 2011: Broader Fiscal Adjustment

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

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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 III).

Box 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. In fact, both sides have compelling arguments, and a policy that seeks a blend of 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 Section III of the *WEO*, fiscal tightening is likely to reduce GDP growth (the multiplier is small—0.5 to 1—but is not zero), with respect 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 IV). 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 II), but that does not mean that risks can be ignored. The easy financing conditions most advanced economies continue to enjoy—which reflect a range of factors noted in Chapter II—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 III). Unfortunately, however, some up-front tightening is likely to be needed to ensure that future plans are credible. Some may argue that an immediate reduction in 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, 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 should let the automatic stabilizers operate fully and slow the pace of structural adjustment, as long as market conditions allow.

Figure 2. Selected Advanced Economies: Change in Fiscal Balances (2009–11)
(Percent of GDP)
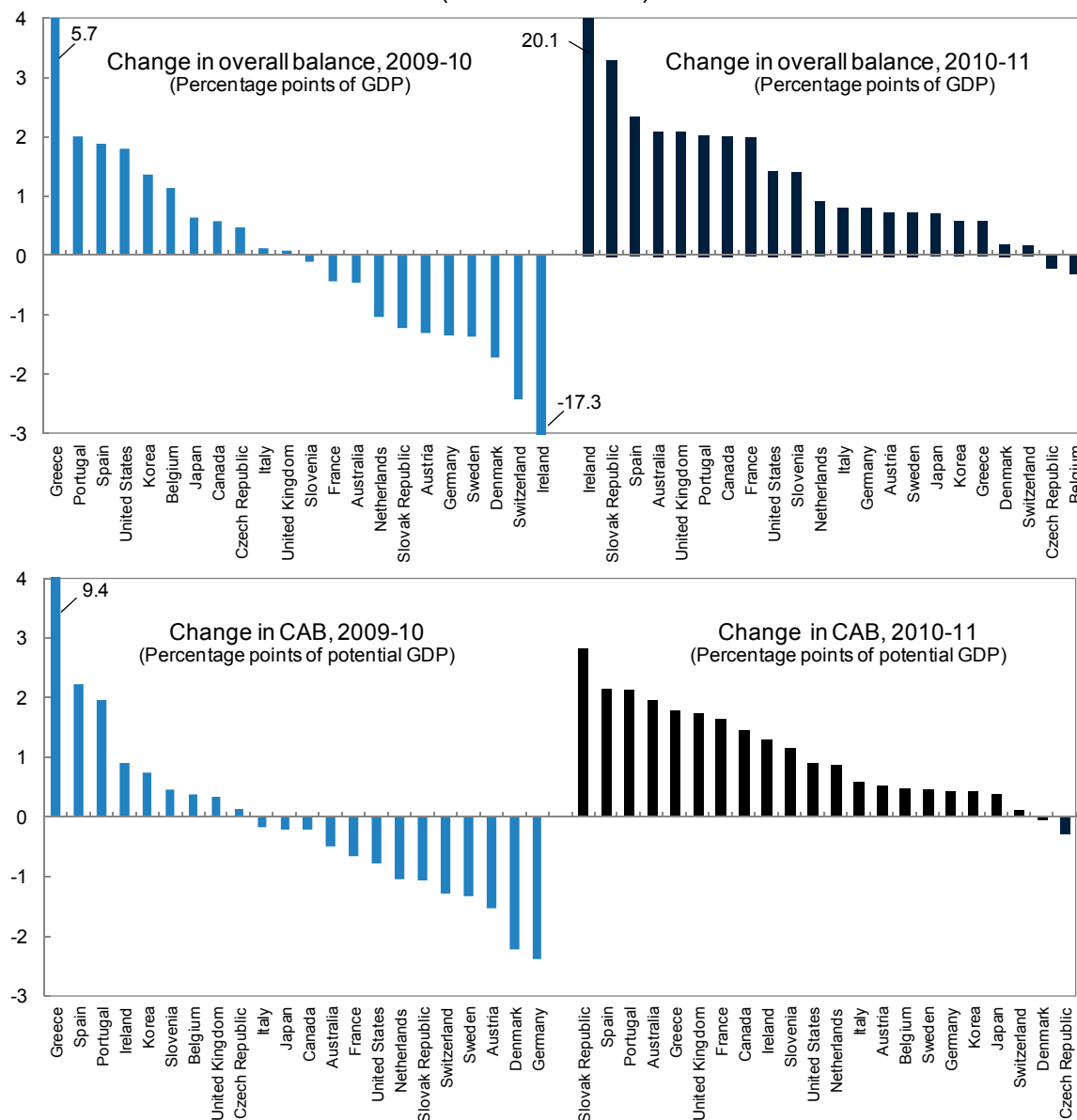
Source: October 2010 *WEO* and IMF staff estimates.
Note: Excluding financial sector support, the overall deficit in the United States is estimated to increase in 2010 by ¼ percentage point of GDP and decline by 1¼ percentage point of GDP in 2011.

8.   **Elsewhere, the strengthening in fiscal balances is also varied, reflecting primarily the uneven recovery and the associated revenue performance**. In LICs, 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) due to a rebound in growth and the unwinding of the stimulus in Saudi Arabia and, to a lesser degree, in Russia.

**Figure 3. Selected Advanced Economies:
Change in the Cyclically Adjusted Balance, 2009–11**
(Percent of potential GDP)
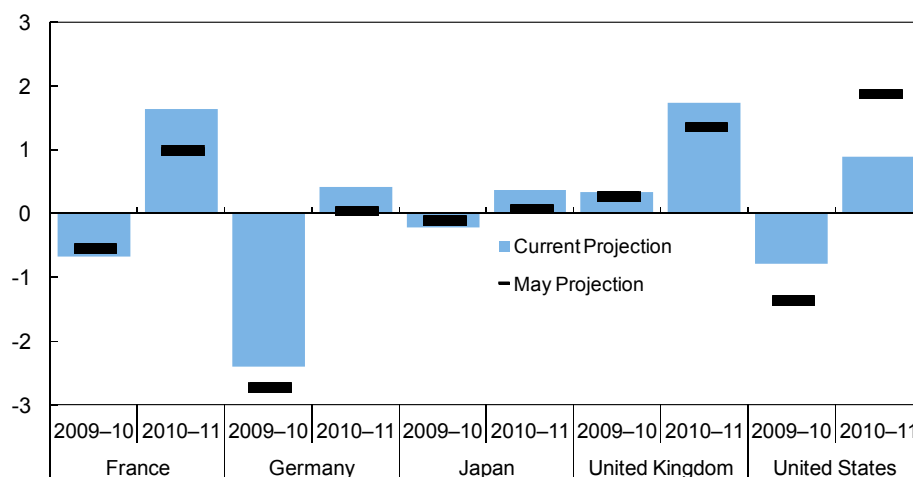
Sources: October 2010 *WEO* and IMF staff estimates.

C. Why Does the Pace of Fiscal Consolidation Differ Across Advanced Economies?

9. **The considerable variation in the pace of adjustment across advanced economies reflects mostly 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 (Figure 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.

[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).

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Figure 4. Adjustment and Initial Fiscal Deficits
(Conditional Change in CAPB; Percent of GDP)
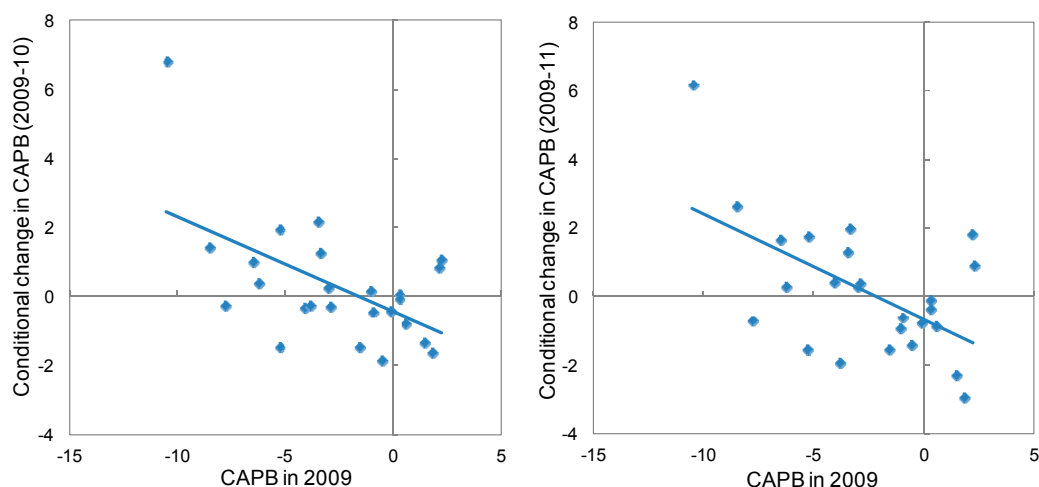
Source: October 2010 *WEO* and IMF staff estimates.
Note: Charts depict conditional correlations emerging from the multivariate regression described earlier. Conditioning variables are the gross public debt ratio at the end of 2009, the change in the CAPB over 2007–09, average government bond yields in 2009, the average rate of unemployment in 2009 and the change in the unemployment rate over 2007–09.

- 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 5).

Figure 5. Adjustment and Bond Yields
(Conditional Change in CAPB; Percent of GDP)
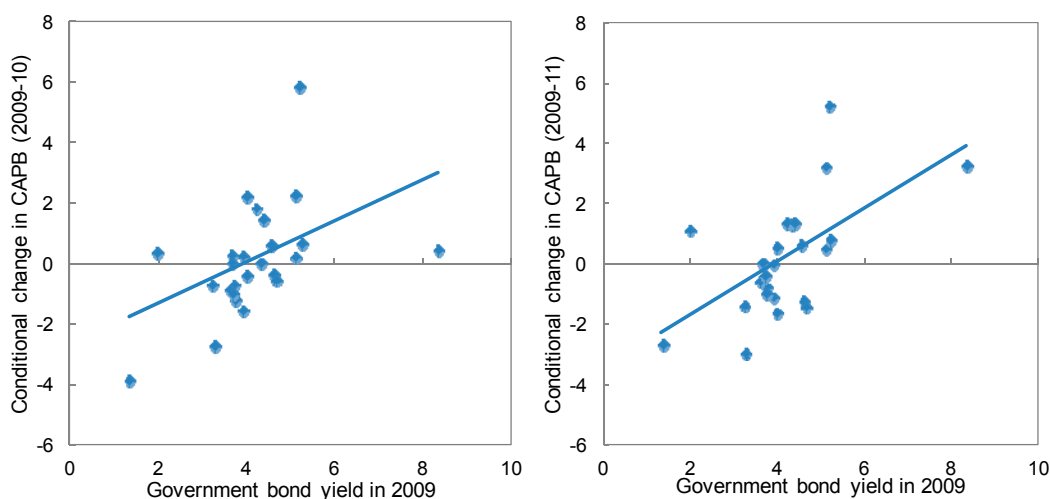
Source: October 2010 *WEO* and IMF staff estimates.
Note: Charts depict conditional correlations statistically significant at the 5-percent level. Conditioning variables are the gross public debt ratio at the end of 2009, the change in the CAPB over 2007–09, the level of the CAPB in 2009, the change in the unemployment rate over 2007–09, and the average rate of unemployment in 2009.

- 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.

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

10.   **Fiscal deficits still exceed what would be necessary to stabilize the public debt ratio**. By end-2011, public debt in advanced economies 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 6). Divergences within these economies are significant, though (Figure 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 in 2010–11, with the highest (between 15 and 36 percentage points) projected for Greece, Ireland, 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 20 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 countries now projected to have debt ratios above 80 percent of GDP by end-2011, compared to 17 percent pre-crisis (Figure 8).[6]

11.   **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, in some cases (Latvia, Lithuania)

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

[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 on IMF.org and is linked to the WEO to provide for regular updates. An IMF Working Paper (see Abbas et al., 2010) provides further information on the HPDD, including sources, definitions, and institutional coverage.

significantly. Due to the generally smaller impact of the crisis on emerging economies, the distribution of debt ratios has shifted less than for advanced economies (Figure 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, reflects mostly emerging Europe, highlighting the regional concentration of fiscal vulnerabilities. This said, the resumption of the decline in emerging markets' debt ratios is still 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.

Figure 6. General Government Gross Debt Ratios
(Percent of GDP; 2009 PPP-GDP weighted average)
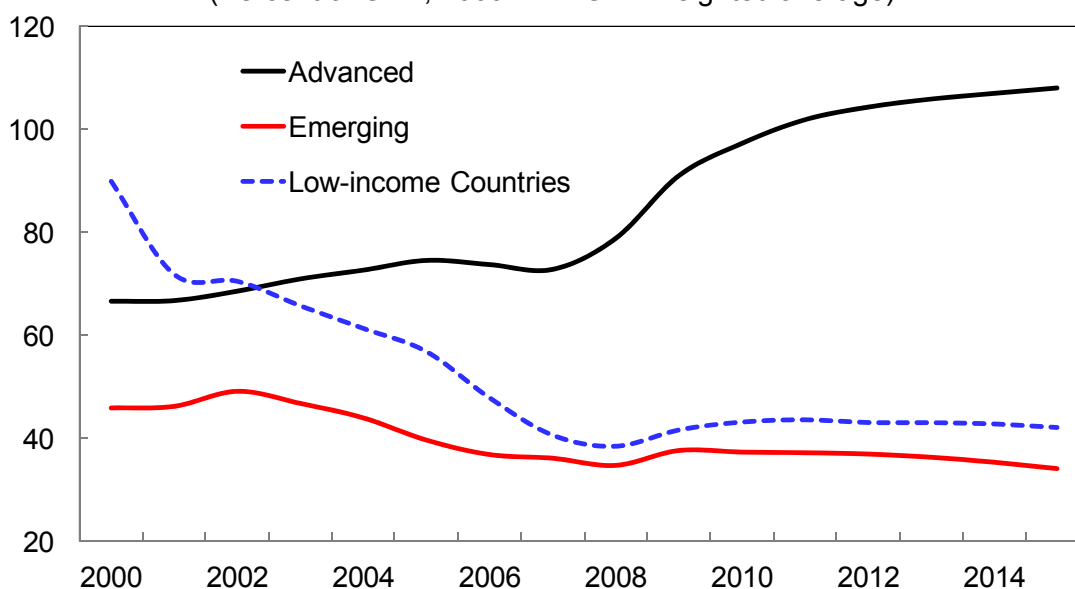
Source: IMF staff estimates based on October 2010 *WEO* projections.

12.   **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 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.

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

Figure 7. Changes in Public Debt in Selected Advanced Economies, 2007–11
(Percent of GDP)
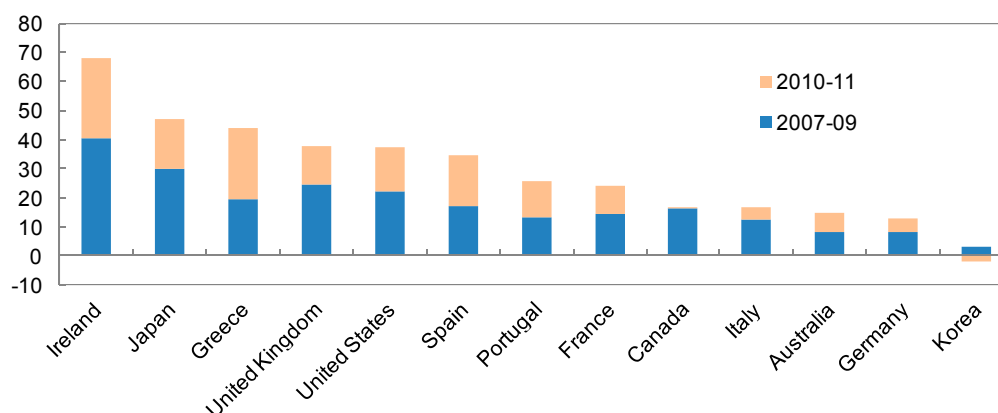
Source: October 2010 WEO.

13.   **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.

Figure 8. Government Debt Distribution, 2007–11
(Percent of GDP)
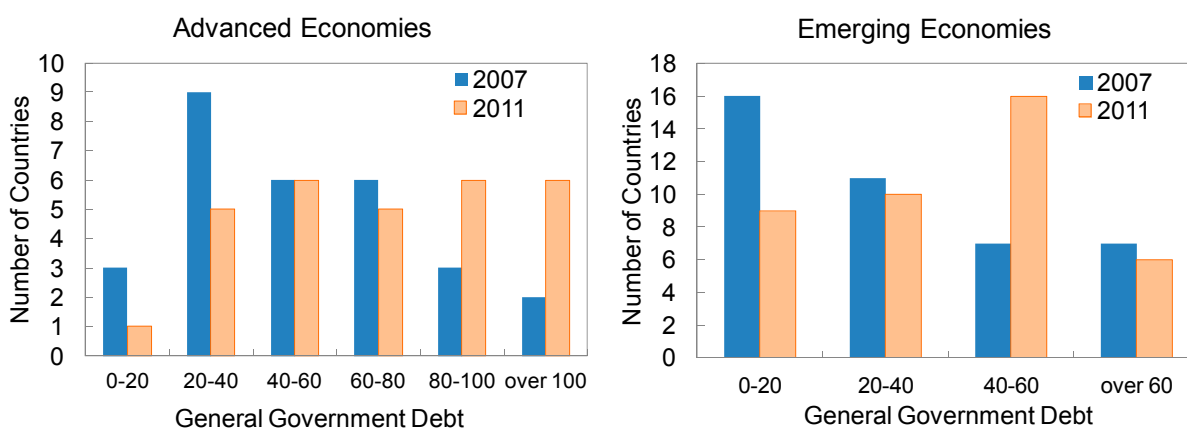
Source: October 2010 *WEO* and IMF staff estimates.

14.   **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 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 this year.

Table 2. Central Bank Securities Holdings and 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 newly issued securities)			
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	0.0	0.0	0.0	0.6	0.7	0.0	0.0	16.0	1.2
Bank of England									
Gilt purchases 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.

E. Financial Sector Support and Recovery to Date

15.   **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 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 injections and asset purchases are broadly unchanged in Germany and the United Kingdom. There has, however, been a sharp increase in public outlays for the banking sector in Ireland, related predominantly to the support to Anglo-Irish Bank. The uptake of guarantees continues to be

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

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]

Table 3. Selected Advanced Economies: Update to 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 US$	1,549	1,074	265	809
Average (end-Dec 2009)	7.9	5.1	1.1	4.0
In billions of US$	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 May 2010 *Fiscal Monitor*.
[2] For Germany, the pledged amount includes €85 billion (3½ percent of GDP) for asset purchases, which were not pledged in advance.

16.   **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.

17.   **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 3), bringing the average cost to

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[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).

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 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, and 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.

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[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.

[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.

II. SOVEREIGN GROSS FINANCING NEEDS AND GOVERNMENT DEBT MARKETS

A. Continuing High Sovereign Gross Financing Needs

18.   **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 4). 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 needs. Japan's financing need remains by far the largest, at over 50 percent of GDP, followed by the United States, Italy, Ireland, Belgium, France, and Spain 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. 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 9).

Table 4. Selected Advanced Economies' Gross Funding Need, 2010–11[1]
(Percent of GDP)

	2010			2011			
	Maturing Debt	Budget Balance	Total Funding Need	Maturing Debt	Budget Balance	Total Funding Need	Gross Debt
Japan	43.4	-9.6	53.1	48.9	-8.9	57.9	233.3
United States	15.4	-11.1	26.5	18.1	-9.7	27.8	99.3
Italy	20.3	-5.1	25.4	18.2	-4.3	22.5	119.7
Ireland [2]	6.5	-31.9	23.2	6.1	-11.8	17.8	107.8
Belgium	17.8	-4.8	22.6	18.4	-5.1	23.4	103.1
France	14.3	-8.0	22.3	16.0	-6.0	22.0	87.4
Spain	10.8	-9.3	20.1	11.0	-6.9	17.9	70.2
Portugal	11.6	-7.3	18.8	15.5	-5.2	20.7	87.1
Greece	10.3	-7.9	18.1	16.5	-7.3	23.8	139.3
Canada	13.1	-4.9	18.1	13.3	-2.9	16.2	80.5
United Kingdom	5.3	-10.2	15.5	7.5	-8.1	15.6	82.0
Germany	8.5	-4.5	13.0	9.1	-3.7	12.8	76.5
Finland	9.1	-3.4	12.5	9.3	-1.8	11.1	52.2
Sweden	4.1	-2.2	6.3	4.5	-1.4	6.0	41.3
Australia	1.5	-4.6	6.1	2.0	-2.5	4.5	24.3
Weighted average	17.0	-9.1	26.0	19.3	-7.6	26.9	109.4

Source: Bloomberg; October 2010 *WEO*.

[1]For 2010, the table includes the early January 2010 Bloomberg projection of maturing central governments' short- and long-term debt, and the October 2010 *WEO* projection of general government balance. For 2011, maturing debt is based on the Bloomberg projection 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 refunded 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 not included in funding need.

Figure 9. Advanced Economies: Public Debt (2010) and Financing Needs (2011)
(Percent of GDP)
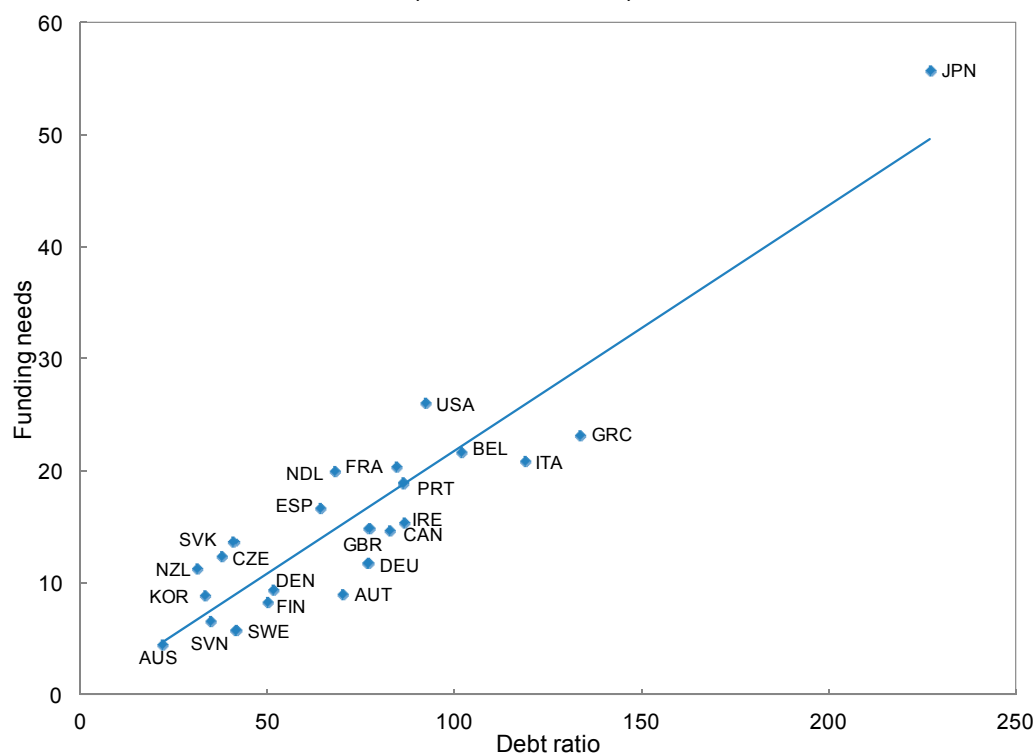
Source: Bloomberg and October 2010 *WEO*.

19.　**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 of 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 economies, the projected financing needs in 2011 are above the 2000–08 average (for example, Estonia, Latvia, and Serbia; see Figure 10), in several others, financing needs remain well below the last decade's average (including Brazil, Jamaica, and Turkey).

- In LICs, 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 10. Emerging Economies: Financing Requirements in 2011 and Deviations from Past Averages (Percent of GDP)
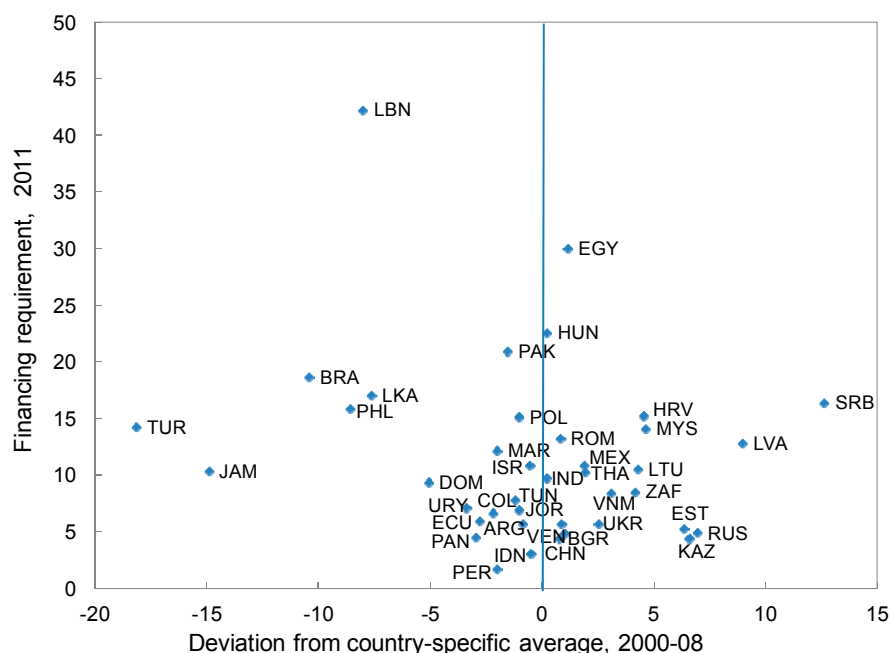
Source: IMF staff estimates and October 2010 *WEO*.

20.   **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 11a). 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, with the latter having an average maturity that is more than double that in the former, and the highest of all advanced economies. This, however, is not a recent phenomenon and reflects concerted efforts by the United Kingdom to lengthen the maturity structure dating from at least the early 1990s (Figure 11b).

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[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 11a. Average Maturity of Government Debt (Years)
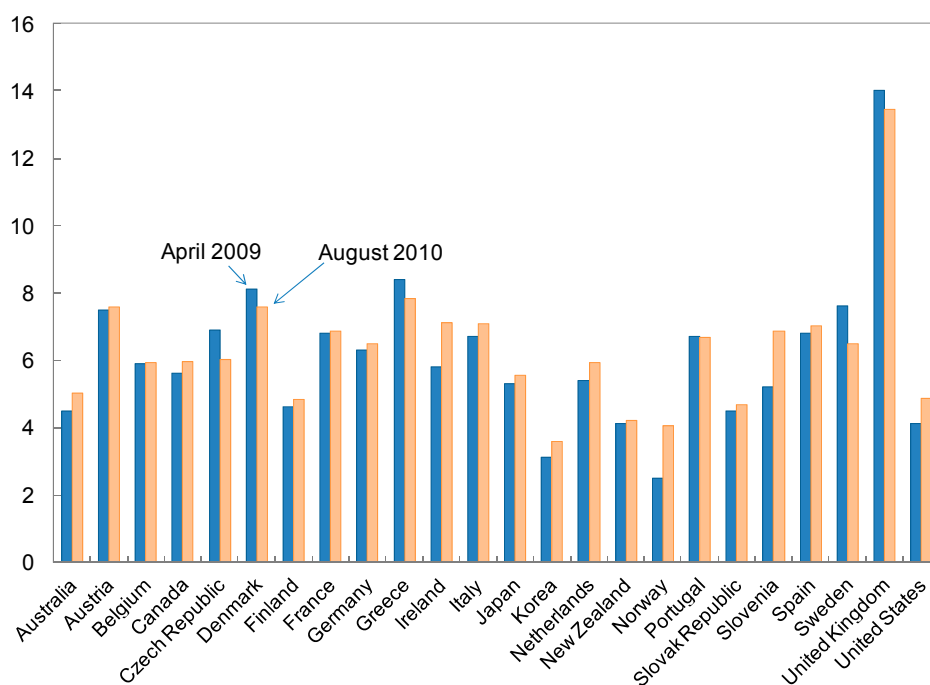
Source: Bloomberg and October 2010 *WEO*.

Figure 11b. Average Debt Maturity: The United States and the United Kingdom, 1996–2010 (Years)
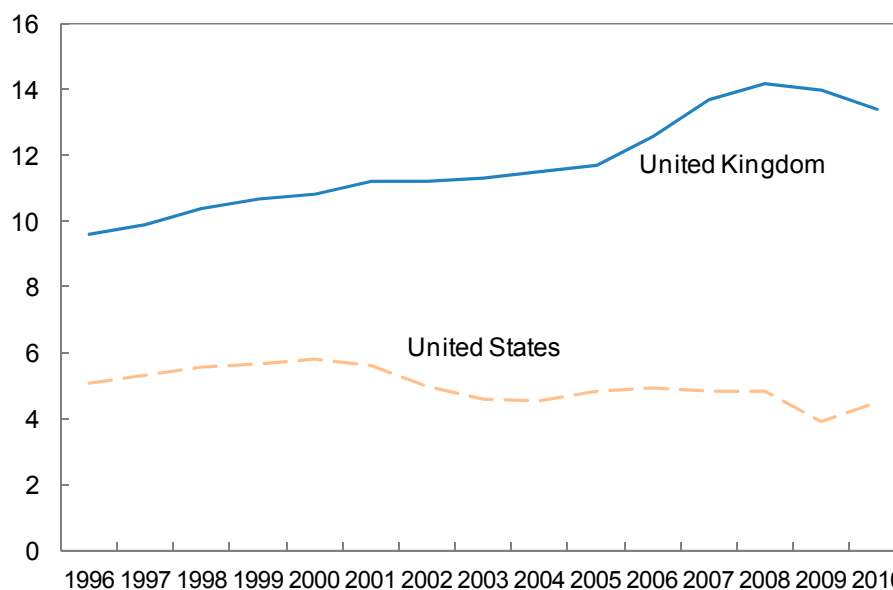
Source: US Treasury Bulletin, June 2010; HM Treasury Debt and Reserves Management Report 2010–11, March 2010; and Bloomberg.

21.   **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 12). Nevertheless, the share of nonresident

holding of government debt continues to vary significantly across advanced economies (Figure 13). 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 for financing government borrowing but in many other economies, including the United States, nonresidents hold more than half of government debt.

Figure 12. Evolution of Nonresident Holding of Government Debt
(Percent of total)
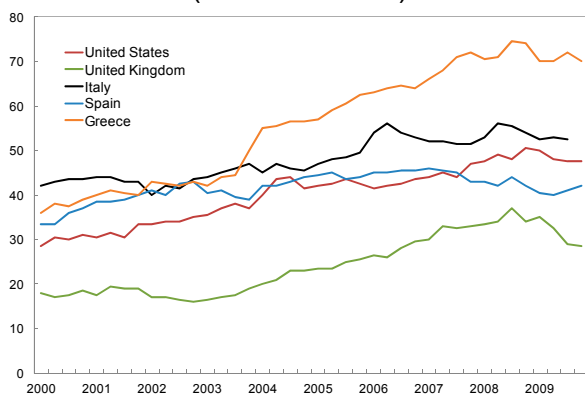
Figure 13. Government Debt Holding by Residence
(Percent of total)
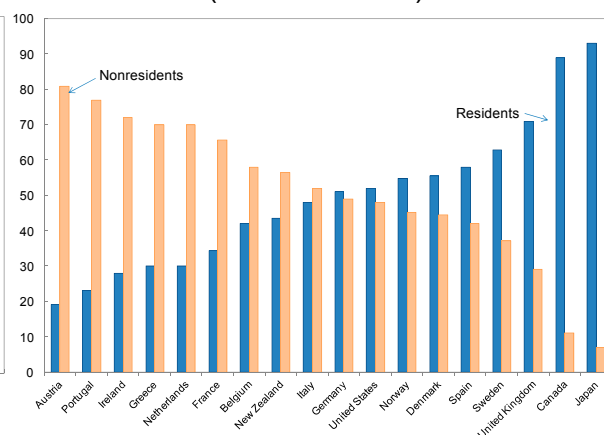
Sources: Bank for International Settlement, 2010; OECD, 2010.

B. Government Bond Yields and Spreads: A More Polarized Market

22.   **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.

23.   **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 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 14, left panel). 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 3).

Box 3. 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 fiscal adjustment need that some advanced countries face is indeed very large, it is not unprecedented. During the past three decades, there were 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 could therefore 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 Japan; Figure 11a) 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, a depreciation; and 2, a substantially unchanged real exchange rate.

Figure 14. Sovereign Bond Yields in Selected EMU and G-7 Economies[1]
(Percent)
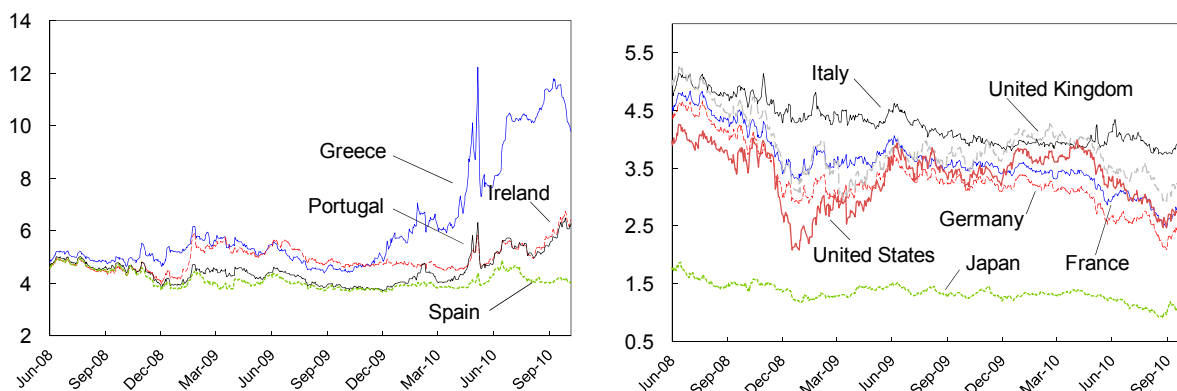
Source: Bloomberg.
[1] 10-year benchmark sovereign yields.

24.   **In contrast, all major advanced economies have recently recorded further
declines in yields** (Figure 14, right panel). 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 15, right
panel). 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 banks.[13] At the same time, there appears to be some negative
correlation across countries between sovereign yields and growth prospects (Figure 15, left
panel). 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).

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

Figure 15. Bond Yields, Growth, and Banks' Relative Equity Prices
(Percent)
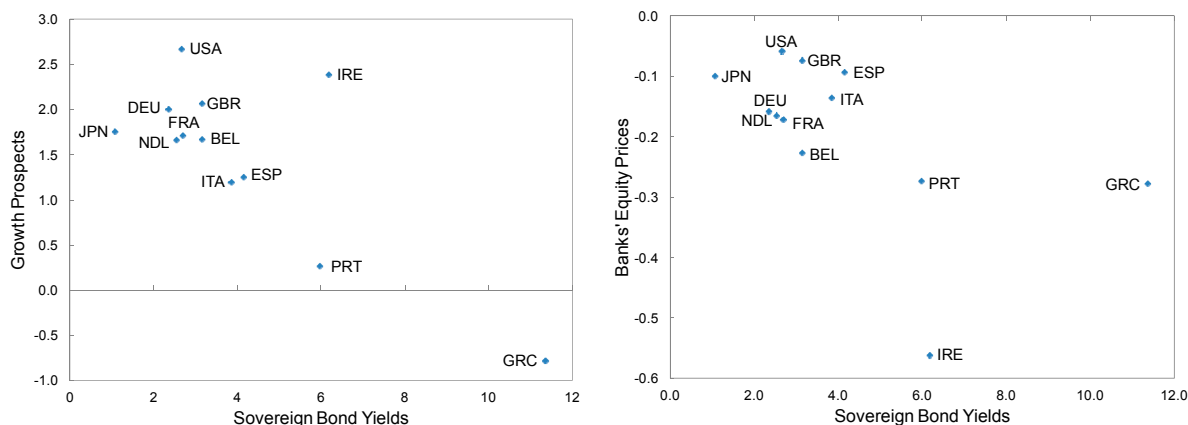
Note: Bond yields are 10-year maturity (September 2010 average). Growth prospects are computed as the average over 2011–12 of *WEO* real GDP growth forecasts. Banks' relative equity prices are the percentage change from October 2009 to June 2010 of banks' stock market price indexes as a ratio of the overall stock market price index.

25.   **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, Spain; the EA-4) since early-2010, while they are returning to pre-crisis levels in the largest economies (Figure 16). 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, Portugal, and Spain, while they are relatively low in the main advanced countries (see Box 4 on similar polarization observed in distress dependence among sovereigns).

26.   **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

Box 4. Financial Market Spillovers among Sovereigns in Advanced Economies[1]

The polarization in market sentiment and in bond yields seems to be reflected also in cross-country spillovers of financial market stress. These spillovers reflect in some cases real linkages (e.g., trade, cross-border banking exposures), but in other cases, they reflect common factors related to markets' risk appetite (e.g., increased global risk aversion). Sovereign 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 Figure 1. Greece, Portugal, Ireland, and Spain exhibit high levels of stress dependence, significantly exceeding their values early last year, while the United States, Japan, and Germany show very low levels of stress dependence.

Figure 1. Countries' Vulnerabilities to Distress Dependence
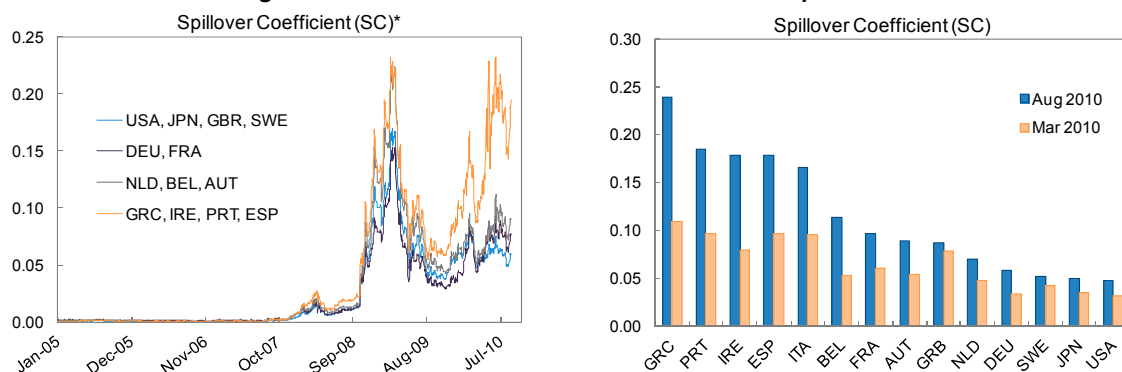
Source: IMF staff calculations.
* *Simple averages*.

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 (Figure 2).

Figure 2. Distress Dependence and Fiscal Conditions (SC vs. FCI)
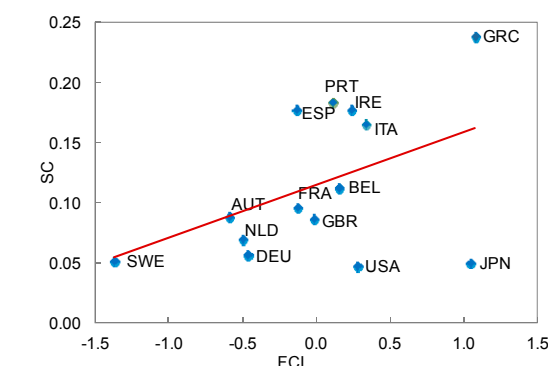
Source: IMF staff calculations.

[1] This note draws on Caceres, Guzzo, and Segoviano, (2010).
[2] See Segoviano (2006), Segoviano and Padilla (2006), 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.

pricing of sovereign risk, an examination of comovements between CDS and RAS series suggests that price signals are reliable only when markets are sufficiently liquid.[14]

Figure 16. Relative Asset Swap and Credit Default Swap Spreads in Selected Advanced Economies

Relative Asset Swap Spreads (Percent)

Credit Default Swap Spreads (Basis points)
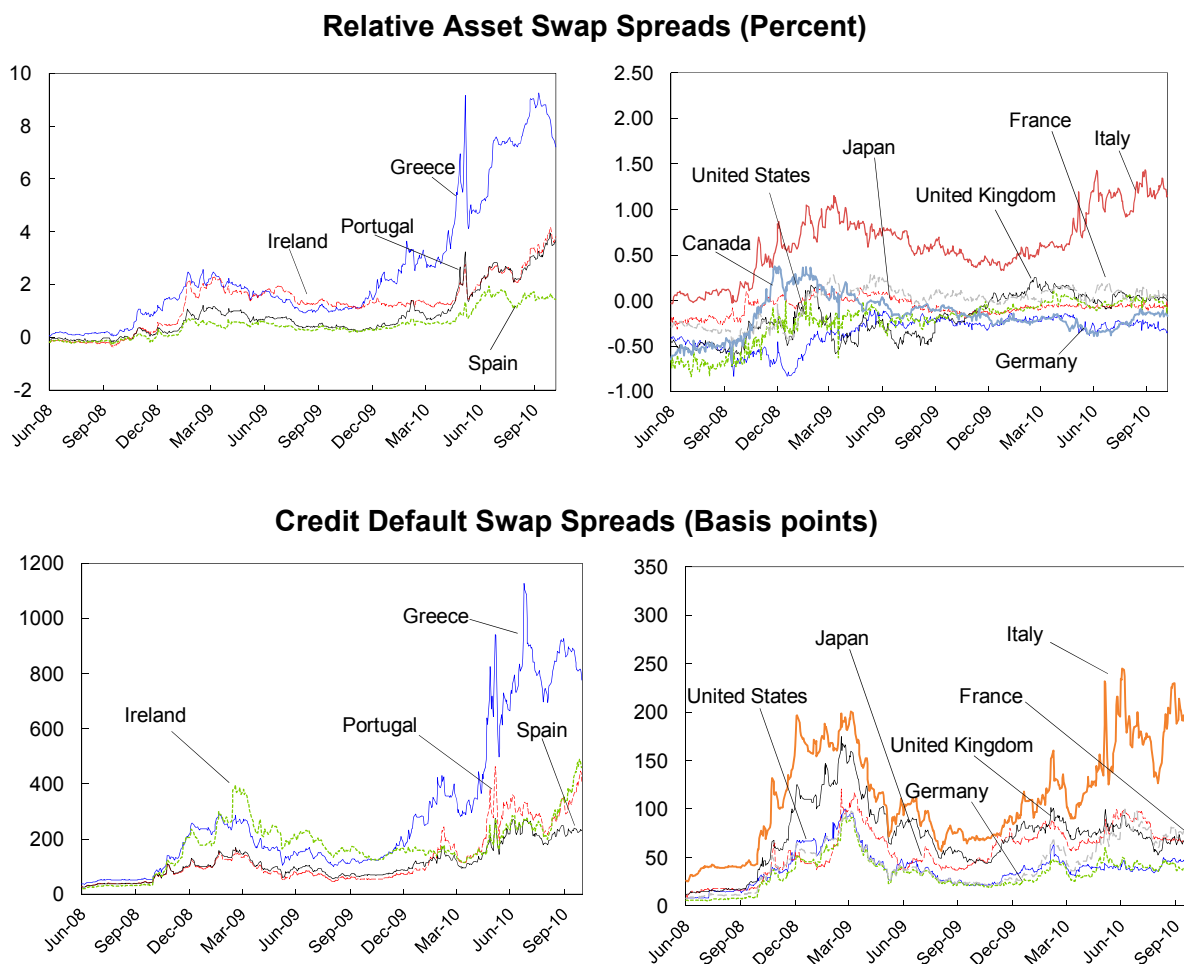
Source: Datastream.

27.   **Developments in Europe also seem to have favored a portfolio reallocation toward emerging markets, in particular 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

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[14] The trading activity of derivatives products has been rising in the EA-4. 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, Ireland, and Spain.

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

(Figure 17). The latter, 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.

Figure 17. Sovereign Spreads in Emerging Markets
(EMBI indices; Basis points)
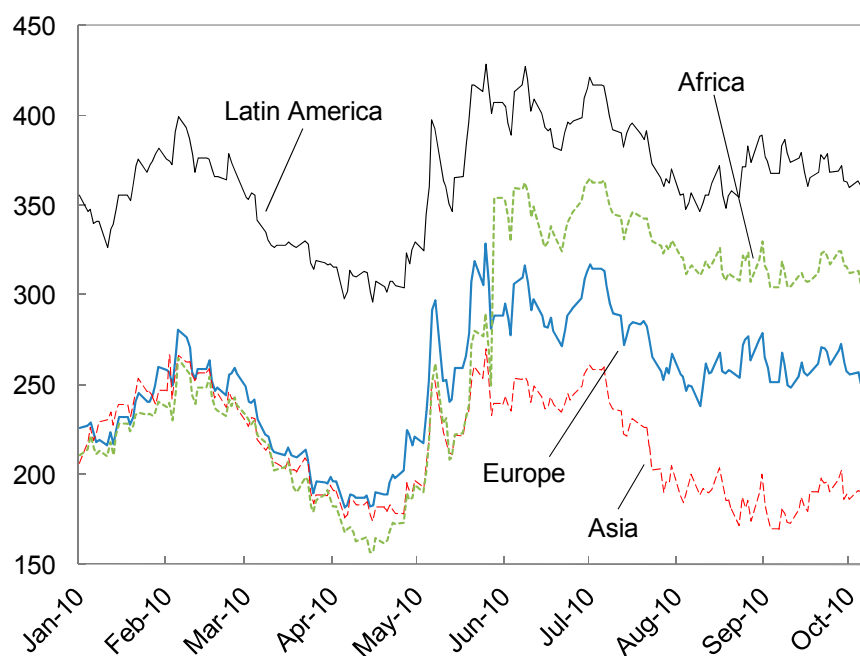
Source: Bloomberg and Datastream.

III. FISCAL ADJUSTMENT PLANS AND MEDIUM-TERM FISCAL OUTLOOK

28.   **Most countries have now published medium-term adjustment plans**. The analysis in this chapter refers primarily to 25 countries.[16] However, information is also provided for broader country aggregates, including in the last section on LICs (see IMF, 2010d for more details, including country-specific summaries of adjustment plans). The main findings are as follows:

- Most countries have announced medium-term fiscal targets, typically for overall balances, up to 2013. Although there are some divergences reflecting the response to market pressures, in general the announced size and speed of adjustment, in terms of improvement in the cyclically adjusted fiscal balance, strike the right balance between fiscal consolidation and cyclical needs.

- Plans are in some cases based on macroeconomic assumptions that are more optimistic than those available from other sources, including the *WEO*.

- 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, including the United States and Japan, have yet to specify their longer-term fiscal policy objective, notably the level to which they intend to reverse their public debt ratio. Without a long-term anchor, there is a risk that markets will remain uncertain about the ultimate objectives of fiscal policy.

- 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, in particular improved fiscal rules and medium-term budgetary frameworks. At the EU level, measures to strengthen its fiscal framework are being considered. But more is needed in several countries, including in the United States.

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

A. Time Frame and Commitment

29.   **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—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.

30.   **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 multi-year 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 (Section E). This would enable necessary revisions with respect to initial plans to be seen to occur as a result of objective circumstances, rather than by what could be perceived as a lack of commitment to underlying fiscal adjustments.

31.   **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 countries announced they would halve their headline deficits by 2013 (Table 5) 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, United Kingdom; FY 2014/15 for the latter). Moreover, adjustment plans by Greece and Latvia are supported by EU/IMF financing.

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[17] China and Saudi Arabia have not published medium-term targets, while 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, for which there is a legal requirement for the federal structural deficit to be reduced to no more than 0.35 percent of GDP by 2016 in broadly equal annual steps.

**Table 5. Advanced G-20 Economies: Projected Improvement 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	-4.8	-7.2	-7.6	-4.2	-6.2
Korea[5]	0.9	…	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) [8]	*-9.1*	*-4.6*	*-4.0*	*-6.8*	*-3.8*	*-3.4*
Average (excl. Korea and Japan) [8]	*-9.1*	*-4.5*	*-3.4*	*-6.6*	*-3.7*	*-3.0*

Sources: National authorities; October 2010 *WEO*.
[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 based on authorities' information, where available. Where unavailable, projected by using 2009 output gaps from *WEO* and projected forward using authorities' information on real and potential growth rates. 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. For general government budget balance, authorities' announced plans are until 2012 (-0.8 percent of GDP).
[3] Authorities' plans for federal government.
[4] Given country differences, the Toronto Declaration added: "Recognizing the circumstances of Japan, we welcome the Japanese government's fiscal consolidation plan announced recently with their growth strategy."
[5] Central government based on GFS86.
[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.

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

32. **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 5), 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

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[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 6). 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.

balances are lower (about 1 percent of GDP), reflecting mainly the currently smaller deficits. In general, the adjustment plans would strengthen the CAB from 5¾ percent of GDP in 2009 (*WEO* estimate) to about 2½ percent of GDP in 2013 (simple average, Table 6). 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) due 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 due to the crisis tend to be the ones envisaging the largest frontloading (Figure 18, left panel), with larger deficit reduction in 2011 than in the subsequent years (often following adjustments efforts taken already in 2010) (Figure 18, right panel). In contrast, in the timing and speed of adjustment by the world's largest economies for which market concerns are contained, projected growth prospects appropriately appear to weigh heavily. In the United States, the largest adjustment is expected to come in 2012 (see Figure 21 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 though concrete medium-term plans still have to be specified.

33. **Headline balances adjust more rapidly than in the *WEO*, reflecting primarily more optimistic growth assumptions, at least in the advanced economies**. The plans, particularly in high debt advanced economies, assume faster real and nominal GDP growth, as well as lower interest payments (Table 7). 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 19).

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

Table 6. 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 average	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 used for Lithuania, South Africa, and Turkey. 2011 debt projection 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 calculation s of the authorities' planned CAB, see footnote in Figure 21.

Figure 18. Planned Timing of Adjustment, 2010−13
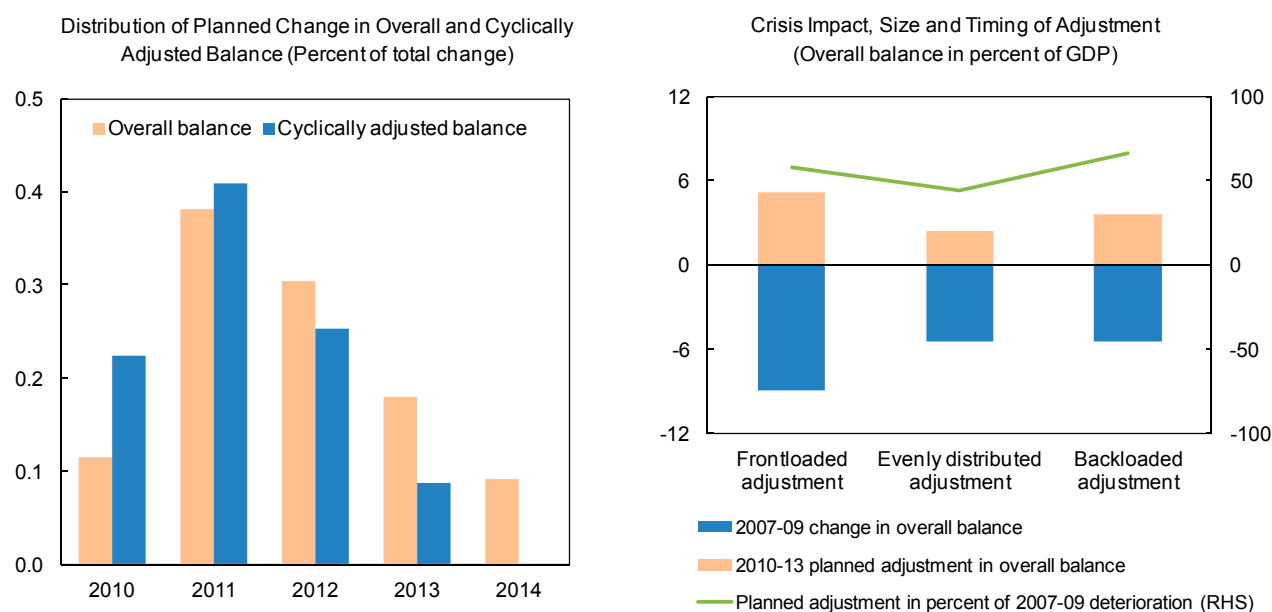
Sources: IMF staff estimates based on authorities' plans for 20 adjusting countries and October 2010 *WEO*.
Notes: A frontloaded adjustment is defined as a higher adjustment in the overall balance in 2011 than in subsequent years, backloaded if the adjustment in 2011 is less than in subsequent years. Outer years include fewer countries. For Ireland, the fiscal balances do not include the most recent issuance of promissory notes to recapitalize banks.

Table 7. 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	3.6	3.5	6.4	7.0	2.9	3.1
Advanced	2.5	2.1	4.7	4.2	3.7	3.7
Low debt	4.2	3.8	6.7	6.4	1.4	1.4
High debt	2.8	2.3	4.5	4.0	3.6	4.0
EME	4.8	5.0	8.4	10.0	2.2	2.7
Low debt	5.4	5.6	9.2	10.6	1.2	5.9
High debt	7.1	6.9	12.3	16.5	5.0	5.9

Sources: Country authorities' announcements; October 2010 *WEO*.
Simple average.
[1] Implied interest rate.

34.   **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 20). Reflecting the divergence in adjustment plans and in economic growth, the evolution of debt ratio over the medium term varies considerably: in about half of 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 20). For emerging economies, the debt ratio is projected on average to resume a downward trend starting in 2011, 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; Russia 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 19).[23]

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[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 19 focuses on comparisons until 2013.

- 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 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 of this requirement (Figure 21, right panel).

- 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., in 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 21, right panel). 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 due to the lack of specified measures in outer years of these countries' plans.[26] For all countries, additional fiscal

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[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 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 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*.

[26] For the United Kingdom, IMF staff also project a somewhat higher fiscal gap to the required adjustment than shown in Figure 21, but nevertheless a significant portion would still be completed by 2015 if plans are implemented as announced.

adjustment will be needed in the medium term due to pressures from health care and pension spending.

Figure 19. Authorities' Plans vs. Staff Projections, Selected Economies, 2007–13
(Overall balance and public debt; Percent of GDP)
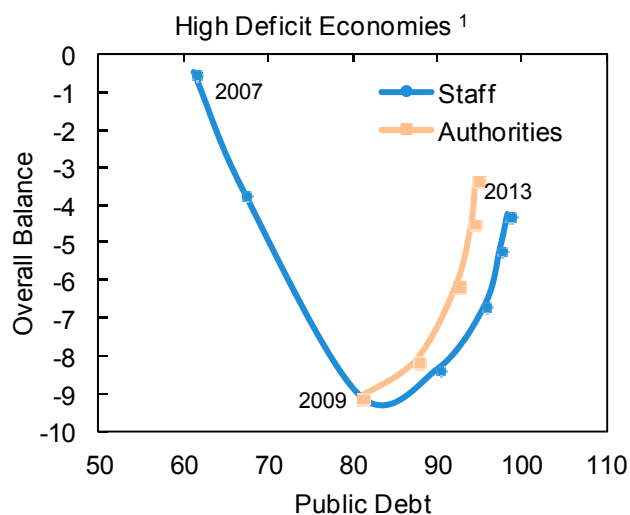
Sources: IMF staff calculations based on authorities' plans and October 2010 *WEO*.
Notes: Simple averages.
[1]High deficit economies are those with a general government deficit higher than 5 percent of GDP in 2009.

Figure 20. Public Debt Outlook, 2007−15
(Percent of GDP)
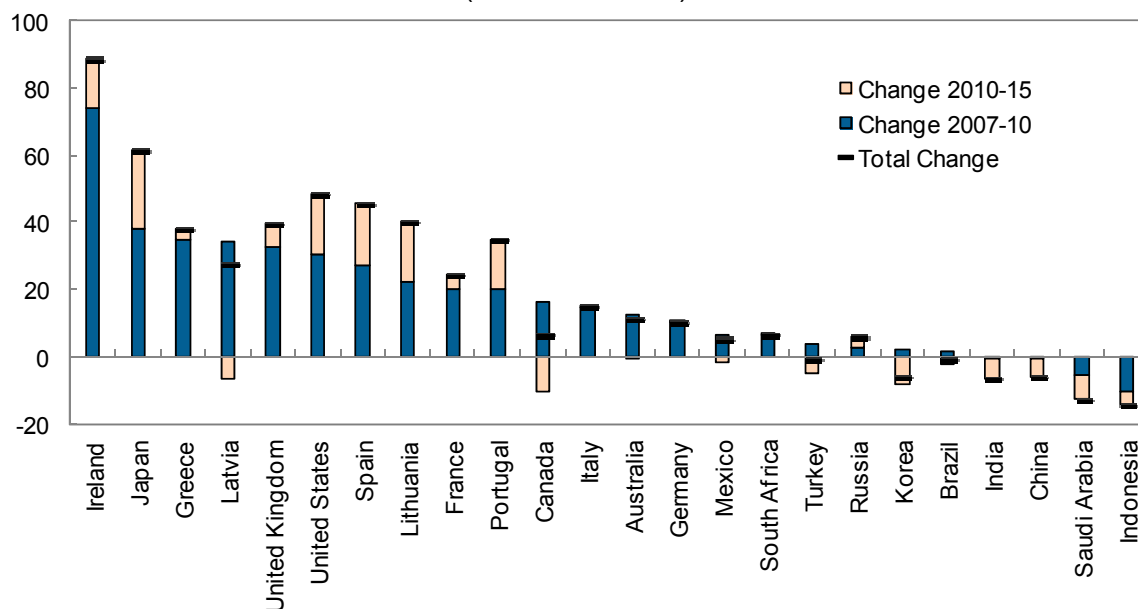
Source: October 2010 *WEO*.
Note: Net debt for Japan.

Figure 21. Authorities' Adjustment Plans and Required Adjustment until 2020
(Authorities' planned annual changes; Percent of GDP)
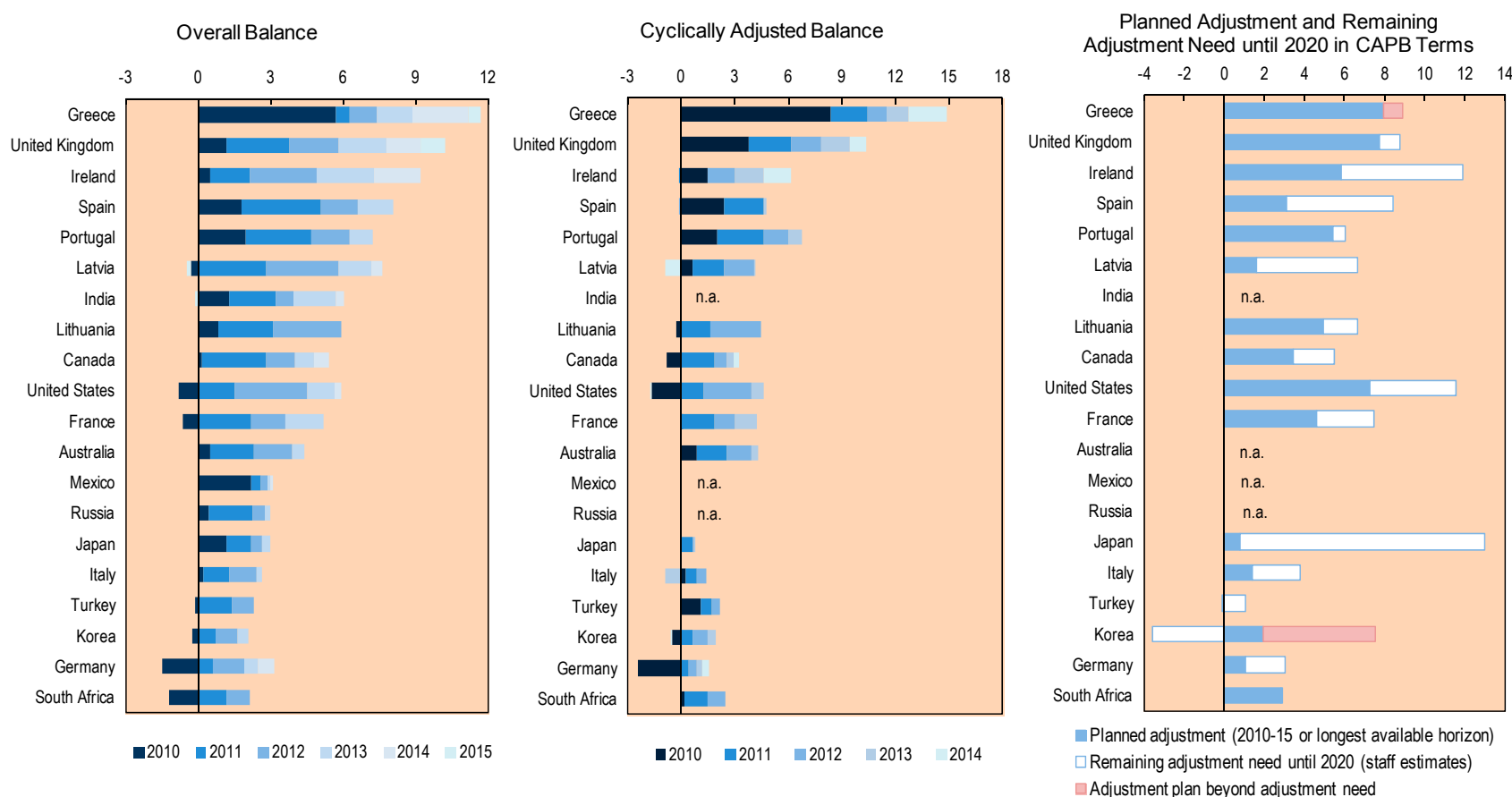
Sources: IMF staff calculations and estimates based on authorities' plans and October 2010 *WEO* projections.
Notes: For the United States and Ireland, adjusted to exclude financial sector support recorded above the line. For the United States, data for federal government in calendar years. For the United Kingdom, data in fiscal years. For Russia, authorities' plans refer to the federal government. CAB based on authorities' information where available. Where unavailable, based on cyclical adjustment using standard elasticities and the output gap. Output gap 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. For Japan, change in the headline CAB. The right panel figure 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 (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.

C. Composition of Adjustment

35.   **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 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.

36.   **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 8). 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 22). 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 and Saudi Arabia envisage budgetary improvements to come largely from the revenue side given their low tax ratios, high dependency on nontax revenue, and larger needs for additional spending to widen social security coverage.[28] Overall, in advanced countries, expenditure is projected to remain constant in real terms during 2010 (Figure 23, left panel), 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 projected to be all but closed—will still be larger than in

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[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).

[28] Saudi Arabia is in the process of establishing a VAT.

2007 by 2¼ percentage points,[29] although this is mostly due to the projected decline in potential output related to the crisis.

Table 8. Planned Composition of Fiscal Adjustment

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

Sources: IMF staff estimates based on country authorities' information.
Note: Categorization is based on the whole 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 22. Adjustment Composition vs. Revenue-to-GDP Ratios
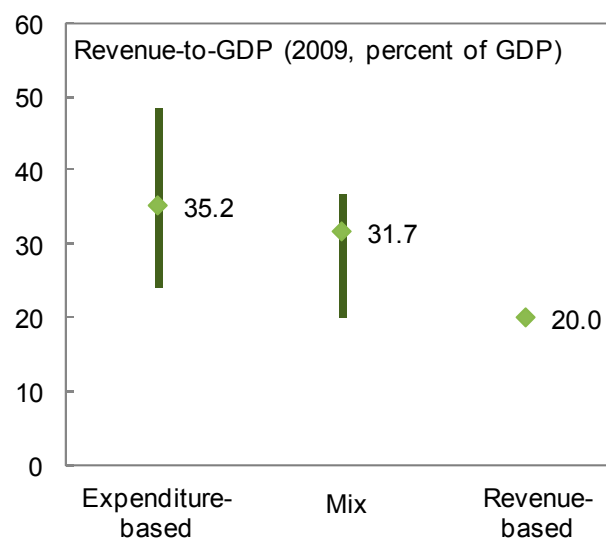
Note: The figure shows the minimum, maximum, and average for each category. Revenue-based category includes only China. Simple averages.

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

Figure 23. Planned General Government Real Expenditure and Revenue Growth
(Percentage change)

General Government Expenditure

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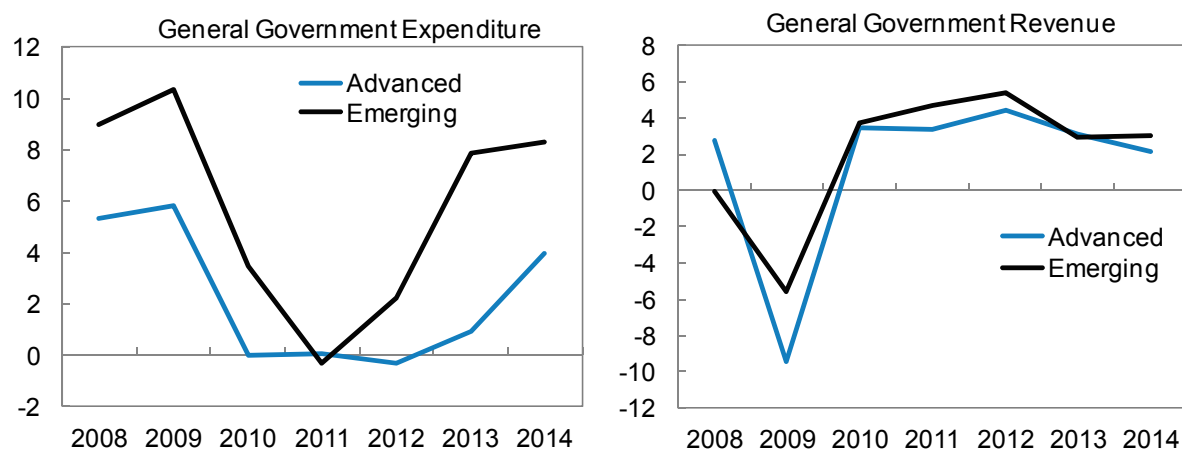
Source: 2008–10 are based on October 2010 *WEO*; 2011–14 are based on country authorities' plans.
Note: Simple average. Outer years include fewer countries.

37.   **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.[30] Many advanced countries have announced a public 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 24). 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).[31]

Figure 24. Wage Bill and Social Protection Expenditure, 2008 (Percent of GDP)
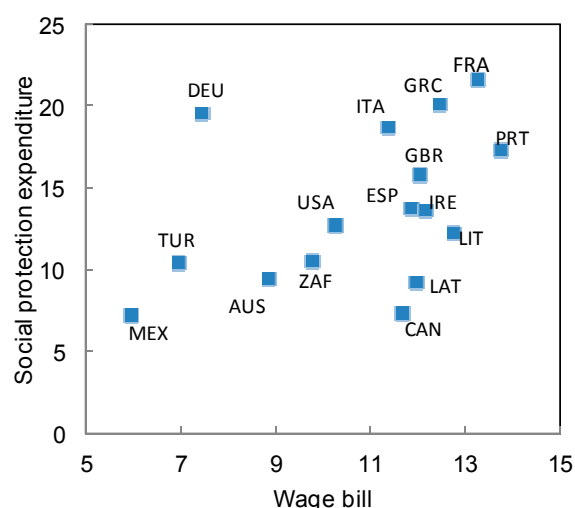
Source: Eurostat and IMF staff estimates.
Note: Data are for 2008 or latest year available.

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

[31] 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.

Reduction in defense spending is under consideration in Canada, Germany, United Kingdom, and United States.[32]

38.   **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 (Australia, Germany, Ireland, Korea, South Africa), as well as export taxes on commodities (Russia). To the extent that higher direct taxes discourage labor supply and investment, consolidation could weigh on growth prospects.[33] On the positive side, half of the envisaged tax measures, 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 in order to reduce tax evasion. This is important in terms of both equity and efficiency considerations, and the large existing margins to improve compliance.

39.   **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 undertaken 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 for improved targeting of benefits, including through enhanced means-testing, to make sure resources reach those most in need (Figure 25; Appendix 3). In addition to addressing the human costs of the crisis, this will also help increase the long-term sustainability of adjustment efforts.

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[32] 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.

[33] Myles (2009) 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.

Figure 25. Targeting of Non Age-Related Social Spending in the European Union, 2007
(Percent of GDP)
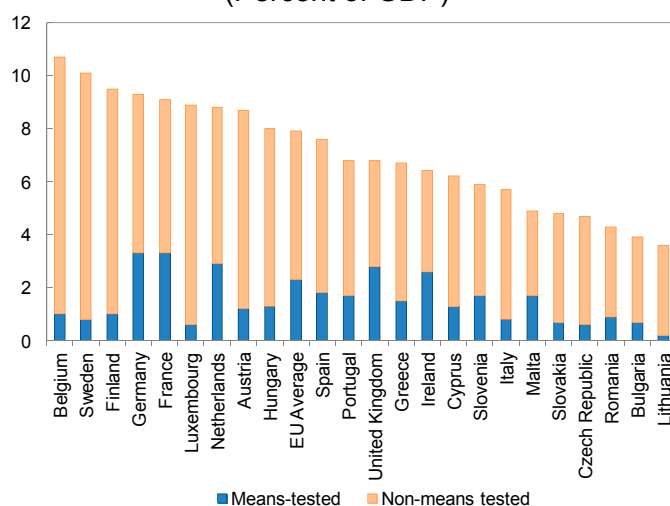
Source: Eurostat.

D.   Medium-term Adjustment Needs and Structural Reforms

40.   **To address medium-term fiscal gaps, entitlement reforms—in particular of health care systems—are critical**.

- 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.[34] Further reforms are, however, needed. First, the projected spending increase remains sizable: future public pension spending increases over the next 20 years amount to 8¾ percentage points of GDP in net present value terms. Second, spending pressure may turn out to be stronger, unless at the same time reforms are not 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 5), 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).

[34] 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 V. For more details on projected health care and pension increases as well as reforms undertaken in both areas, see IMF (2010b).

Box 5. The Outlook for Public Health Spending in Advanced Economies

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] Staff projections also point to substantial increases in spending in other advanced countries, including the United States (4½ percentage points of GDP during 2011–30). 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)
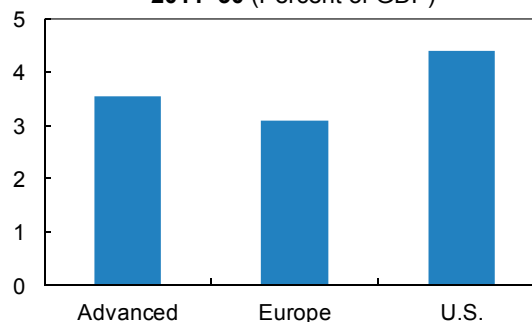
Source: IMF staff calculations.

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).

Despite the 2010 health care reform in the United States, public health spending is likely to continue to increase rapidly. Under the 2010 reform, Medicare payment cuts would be offset by the expansion of eligibility and the provision of insurance subsidies. At present, based on Congressional Budget Office projections for federally mandated spending, 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.

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.

- 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.

E. Reform of Fiscal Institutions

41.   **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 and is in the process of drafting legislation to make it permanent. The government has also established a fiscal mandate—to balance the cyclically adjusted current budget and put the net public sector debt ratio on a downward path by 2015/16—to guide the consolidation plans. 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.[35] The U.S. President has also set up a bipartisan fiscal commission charged with developing options to reach primary balance by 2015. Moreover, at the EU level, measures to improve the effectiveness of the EU's fiscal governance framework are making progress (Box 6). 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 9), among them several which faced market concerns (Latvia, Lithuania, 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 considerable greater role of such institutions (Table 9).

42.   **However, there is considerable scope to further strengthen fiscal and budget institutions 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

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

detailed medium-term revenue and spending projections, with the latter clearly presenting quantified estimates of the administration's policy priorities. However, neither the Office of Management and Budget's 10-year projections of federal outlays, nor those in Congress's budget resolution provide binding multi-year restrictions on total spending. To ensure those plans are implemented, budget preparation and approval processes need to follow a top-down sequence. Italy, for example, would benefit from strengthening its budget preparation process, aiming at a tighter top-down process.

Table 9. Number of Countries with Fiscal Rules and
Independent Fiscal Institutions or Plans for Their Adoption

	Fiscal rules			Fiscal institutions		
	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 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.

Box 6. Reforming Fiscal Governance in the European Union

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 been largely 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).

Reform proposals emanating from the European Commission, the ECB, and the Task Force rapidly converged on several dimensions. These included broadening the use of sanctions to encourage compliance with the Treaty's debt and deficit limits, as well as with commitments under the preventive arm of the SGP. A greater focus on debt dynamics (excessive debts *combined with* unsatisfactory dynamics at unchanged policies could trigger a corrective procedure regardless of the deficit), improved surveillance (most notably through an ex-ante peer-review of budget proposals during a so-called European semester), and additional pressure on member states to strengthen national fiscal rules in line with EU limits also commanded broad support.

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 has 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 Commission recently issued a package of draft legislation incorporating many proposals to strengthen the SGP. First, preventive fiscal surveillance is strengthened through financial sanctions in cases where fiscal policy is deemed imprudent by the Commission. Second, debt receives much greater prominence, as an Excessive Deficit Procedure could be launched regardless of the deficit when debt levels are both excessive (above 60 percent of GDP) and not declining sufficiently rapidly. Third, the role of the Council in EDP-related decisions is limited to a veto right requiring qualified majority. Fourth, a draft directive concerning euro area member states will mandate minimum requirements for national fiscal frameworks, including the quality and coverage of fiscal data and the consistency of national fiscal rules and procedures with the SGP. The draft legislative package forms a basis for further discussions with the Council and the European Parliament.

Overall, the reforms now under consideration appropriately lead to a greater involvement of the center in national fiscal policies. It is essential for the credibility of the framework that the legislation that is ultimately adopted maintain expanded opportunities to hold member states accountable for their commitments under the preventive aspects of the framework and effectively sanction violations of their treaty obligations.

F. Medium-Term Fiscal Trends in Low-Income Countries

43.   **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.

44.   **There is some variation by region and by country groups**. In sub-Saharan Africa and in LICs where IMF-supported programs are in place, the projected fiscal improvement is somewhat lower and about one half reflects cyclical factors related to the recovery (Figure 26). 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.

45.   **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 27). 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 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.

**Figure 26. Projected Improvement in Fiscal Balances
in Low-Income Countries, 2011−15**
(Median change; Percentage points of GDP)

Primary Balance Structural Primary Balance
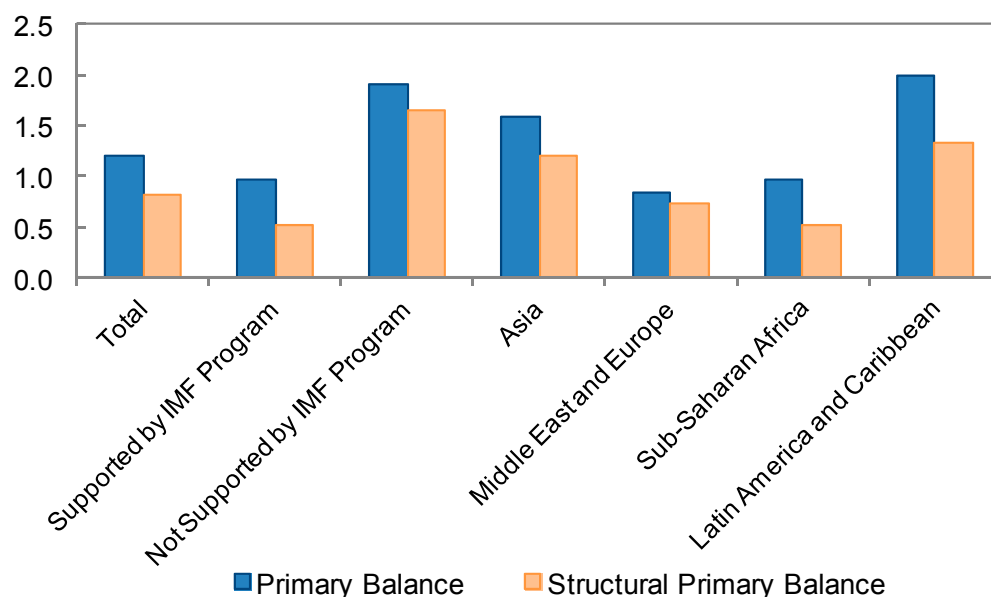
Source: October 2010 *WEO*.

46.   **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.

Figure 27. Low-Income Country Debt Paths
(Percent of PPP-weighted GDP)

Baseline
Growth Shock
Growth Shock + Grant Shock
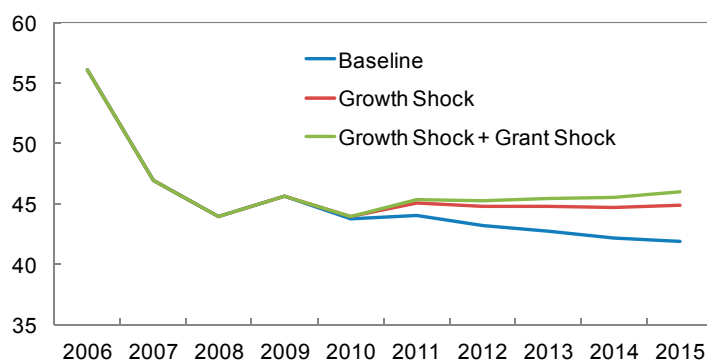
Source: IMF staff estimates.

IV. ASSESSING FISCAL RISKS[36]

47.   **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 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).[37]

A. Rollover Problems

48.   **Rollover risks remain at high levels in advanced economies and, to a lesser extent, 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

49.   **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 I, 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

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[36] As clarified below, the term "risk" is here meant to refer to the likelihood that certain unpleasant events materialize, and not to the distribution of fiscal outcomes around its baseline. The two are, however, related. The distribution of fiscal outcomes is discussed in Appendix 4.

[37] 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).

deficits and debt stocks and the expected further strengthening of these variables as the economic recovery there continues robustly.

50.   **Not much progress has been made in allaying long-term concerns**, primarily related to the evolution of spending for pension and health care.[38] The main development in this area has been the approval by Greece in July of a substantial pension reform, which has considerably improved the long-term fiscal baseline in that country. Long-term spending pressures are generally lower among emerging markets, reflecting less adverse demographics (in most countries) and projected faster output growth.

Distribution of fiscal outcomes around the baseline

51.   **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 *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 I, 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.

- *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

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[38] Work is under way to incorporate into this assessment spending pressures arising from global warming.

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 III, 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

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

B.   Risks of High Long-Term Public Indebtedness

53.   **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 III, 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 even be 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.

V. SELECTED SPENDING AND TAX ISSUES

54.   **In addition to the fiscal challenges discussed above, various other fiscal policy priorities have come to the fore recently**. This chapter discusses some of the main ones, while exploring the potential of reforms in these areas for making a positive contribution to the strengthening of public finances as well as boosting economic activity and fostering sustained growth.

A. The Effect of Pension Reforms on Growth

55.   **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-run impact of such measures on activity. This section explores the broader macroeconomic as well as budgetary impact of pension reforms using the IMF's GIMF model.[39] 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 short to medium run and 4¼ percentage points over the long run and reduce the debt-to-GDP ratio by 30 percentage points over the same period.

56.   **Three reform options relating to pay-as-you-go public pension systems are assessed**.[40] They are broadly equivalent in terms of their fiscal impact, all of them being broadly sufficient to offset the projected increase in pension spending over the long run (Chapter III), excluding their possible effect on growth. (1) *Raising the statutory retirement age by two years*: this reduces lifetime benefits paid to pensioners, encourages longer working lives with higher earned income, which may lead to a reduction in saving and increase in consumption during working years. In addition, increased fiscal saving can have long-run positive effects on output through lowering the cost of capital and crowding in investment. (2) *Reducing pension benefits by 15 percent*: this 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 run, but would increase investment over the long run. (3) *Increasing contributions by 2½ percentage points*: this 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 runs.

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[39] 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 contains five regions: the United States, the euro area, Japan, emerging Asia, and remaining countries.

[40] 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 run at the level before pension entitlement pressures started to accumulate.

Increasing retirement age by on average two years[41]

57.   **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 is because *an increase in retirement age while keeping public pension spending constant* boosts labor supply and labor income (Figure 28). 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 due to a reduction in public pension spending:* debt-to-GDP ratio declines by over 40 percentage points relative to baseline, in part also due to increased tax revenue on income and consumption.

- **Euro area**: results are qualitatively similar to the United States, but there is a smaller required pension age increase to attain given budgetary saving (due to the fact that in the euro area, benefits are larger), more rigid prices, and a more aggressive monetary rule[42] leading to a weaker consumption profile relative to the United States in the short run. Over the long run, consumption improves by more 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.

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

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[41] 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.

[42] 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 pre-specified 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 28. Pension Reform
(Percent deviation from baseline)[1]

Scenario 1[2]   **Scenario 2**[2]   **Scenario 3**[2]

A. INDIVIDUAL PENSION REFORM

B. COOPERATIVE PENSION REFORM
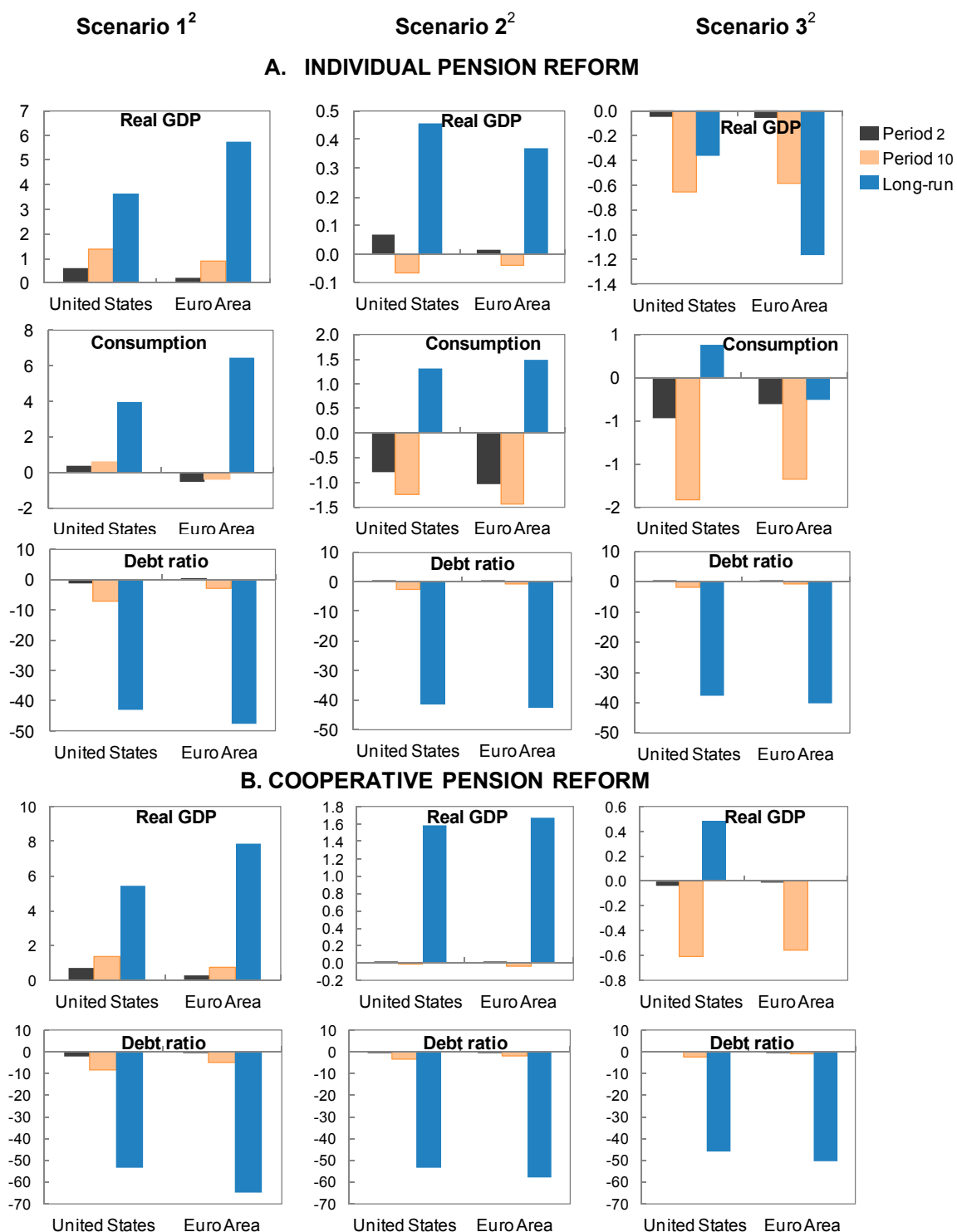
Source: Based on simulations of the IMF Global Integrated Monetary and Fiscal (GIMF) Model.
[1]Simulations are based on the Global Integrated Monetary and Fiscal (GIMF) Model. The baseline assumes that in the long run, public-debt-to-GDP ratio increases significantly in line with staff's pension spending projections.
[2]Scenario 1 is an increase in statutory retirement age; Scenario 2, a reduction in pension benefits; Scenario 3, an increase in contributions.

Reducing pension benefit payments[43]

58.   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 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-run impact on world real interest rates and, by extension, on investment and output on those regions which do not undertake reform.

Raising contribution rates[44]

59.   **An increase in labor income tax rate results in a decline in the supply of labor and through a decline in households' real disposable income generates a negative demand response**. This leads to significant short-run 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 run. The consequent decrease in the world real interest rate does not play as effective a role in raising real GDP in the long run 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 to 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.[45] As a result, a permanent expansion in real GDP

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

[44] 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.

[45] 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.

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 and over 10 times larger than under reform Scenarios 2 and 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).

B.   The IMF Report on Financial Sector Taxation

60.   **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* government 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 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).

61.   **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.

62.   **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.

- In 2008, Sweden established a financial stability fund 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.

- The German Cabinet has approved a levy to be enforced on all banks holding a German banking license with the rate varying depending on the systemic importance

of the institution (measured by their liabilities net of equity or deposits, as well as their interconnectedness with other institutions).

- The European Commission has proposed creation of a system of resolution funds with a target funding level of 2 to 4 percent of GDP. The funds would be raised through a levy on the liabilities of financial institutions, possibly calibrated to systemic risk.

63.   **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 "too big to fail" both lowers their borrowing costs (about 0.2 percent)[46] 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 which is inflicted in the downturn or when an asset bubble collapses generally creates large deficits that are financed by taxpayers.

64.   **For internalizing this systemic risk and raising revenues to offset future financial support needs, the IMF has proposed the "Financial Stability Contribution" (FSC)**. This would impose a tax on financial institutions' liabilities 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 to 4 percent of GDP needed to finance an adequate stability fund within 10 years. Such a change would be complementary to, not a substitute for, strengthened regulatory and supervisory tools.

65.   **Many G-20 countries already raise substantial revenue from their financial sectors through the 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 10). 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.

66.   **Countries wanting to raise more revenue from the financial sector could consider levying a "Financial Activities Tax," or FAT**. This could be structured either as an addition method 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

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

VAT could be used to compensate for the undertaxation, in aggregate, of financial services under the standard VAT.[47] 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 less likely be passed on to users of financial services. Financial sector value-added averages about 4.7 percent of GDP in G-20 countries, so a 5 percent broad-based FAT could raise an average of about 0.2 percent of GDP.[48]

Table 10. Corporate Taxes Paid by the Financial Sector, Selected G-20 Countries
(Percent)

	Period	Share of Corporate Taxes	Share of Total Tax Revenue
Argentina	2006–08	6.0	1.0
Australia	FY 2007	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	FY 2007–08	13.7	3.5
Korea	2006–08	17.7	3.0
Turkey	2006–08	23.6	2.1
United Kingdom	FY 2006–08	20.9	1.9
United States	FY 2006–07	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.

67.	**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.

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[47] 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 in revenue terms at least, the first of these effects dominates.

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

C. Carbon Pricing Issues in the Run Up to Cancun

68.   **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 between 1 and 2 percent of GDP, depending on the exact design (Table 11). 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 $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 offers an opportunity to take forward such coordination. In developing countries, inefficient fossil-fuel related energy subsidies still abound. Eliminating these could save another $300 billion in public spending on a global scale.

69.   **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 the United States, Australia, and Europe, cap and trade schemes distribute 80 to 90 percent of the permits free of charge to industries. 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.

70.   **Governments also encounter resistance against carbon pricing due to 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.

71.   **Efficient carbon pricing policy would be greatly facilitated by international cooperation**. Price of carbon that is similar across the globe ensures that the cost of emission reduction is minimized. Moreover, coordination reduces the risk of losing competitiveness by individual countries and avoids problems of carbon leakage. 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 of

developed nations and willingness to offer transfers to support contributions by the less developed world. The Climate Conference in Cancun will offer a new opportunity for such international cooperation.

Table 11. Revenue Potential of Carbon Pricing Policies
(Percent of GDP)

	550 ppm Scenario[1]	Cap and Trade Scheme Proposals
Africa	2.2	
China	1.3	
India	1.7	
Latin America	1.1	
Australia		0.9
US	0.7	0.6
Western Europe	0.8	0.3

[1] Simulation results from MiniCAM model. 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).

D. Fully Tapping the VAT Potential: Not Only the United States and Japan

72. **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 substantially increase revenues. 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 in order to achieve greater efficiency. However, introducing VAT alongside—rather than replacing—the income tax would broaden the federal tax base, making it less prone to cyclical fluctuations; and 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).

73. **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 an efficient way to raise revenues. Taxing consumption is equivalent to taxing accumulated assets and labor income: so 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.

74. **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 12), reflecting the impact of exemptions, preferential tax rates and compliance problems.

Table 12. Potential Gains in VAT Revenue from Increasing C-efficiency

	Current C-efficiency (2006)	Revenue Impact (Percent of GDP) of Increasing C-efficiency to					Revenue Impact (Percent of GDP) of 1 Percentage Point Increase in the Standard Rate
		0.5	**0.55**	**0.6**	**0.65**	**0.7**	
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	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*.
Note: Data for Canada relates to Federal GST.

75.   **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 and reduced rates and improving VAT compliance, it would raise around 2.5 percent of GDP in revenues (Table 12). 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 reflects in part 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).

76.   **Concerns that increasing reliance on VAT as a revenue raiser would penalize low income households are misplaced**. VAT is often argued to be a regressive tax as 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,

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then the regressivity of VAT is not as strong.[49] Moreover, transfers to the poor can be used to address the distributional problems.

77. **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[50] to "essential" goods and services such as fuel, housing, and basic foodstuffs that are consumed disproportionately by the less well off. However, the degree of income redistribution that can be achieved is limited by the fact that rich individuals spend large amounts in absolute terms on these essentials. 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).

78. **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, 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 competing with the public sector. With the private sector taking an increasing role in providing non-basic 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.

79. **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 the "policy gap" and "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.

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[49] See Caspersen and Metcalf (1995). Based on the permanent income hypothesis, individuals' consumption is based on their lifetime 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.

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

80.   **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 13). 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, on average, raise three times as much revenue for emerging countries as it would for advanced countries.

Table 13. 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]			
	Tax Revenues	GDP					Improved Policy		Improved Compliance[2]	
							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
S. 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
Russia	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
							Max. Improvement	Reducing Gap by Half	Max. Compliance	Reducing Gap to 7%
Advanced Economies										
France	42.2	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	17.7	2.6	5.0	69	n/a	…	0.7	0.3	0.4	0.1
Korea	27.6	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	21.1	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 and 13 percent 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).

GLOSSARY

Term	Definition
Automatic stabilizers	Change in the cyclical balance over time.
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. Typically 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 expenditures and revenues, respectively.
Cyclically adjusted balance (CAB)	Overall balance adjusted for the effects of the economic cycle, usually expressed in percent of potential GDP.
Cyclically adjusted (CA) expenditure and revenue	Revenues and expenditure adjusted for the effect of the economic cycle (i.e., net of cyclical revenues and expenditure).
CA primary balance (CAPB)	Cyclically adjusted balance excluding net interest payments
EA-4	Euro area countries under market pressure (Greece, Ireland, Portugal, Spain)
Expenditure elasticity	Elasticity of expenditure with respect to the output gap.
Fiscal stimulus	Discretionary fiscal policy actions adopted in response to the financial crisis that affect the overall fiscal balance.
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 of 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 within the broader public sector, for example in some cases, social security funds.
Output gap	Deviation of actual 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 IMF's *GFSM 2001*). Does not include policy lending. During this transitional period to *GFSM 2001,* not all countries have adopted the new presentation; for some, the overall balance continues to be based on GFSM 1986, defined as total revenue and grants minus total expenditure and net lending.
Policy lending	Transactions in financial assets that are deemed to be for public policy

Term	Definition
	purposes but are not part of the overall balance.
Primary balance	Overall balance minus interest revenue plus interest expenditure.
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	Cyclically Adjusted PB	Cyclically Adjusted PB in 2020-30	Required Adjustment Between 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	4.6
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	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	93.6	-15.0	-6.6	4.8	11.3
Israel	76.1	-1.1	-1.4	1.4	2.7
Italy	118.4	-0.8	0.7	4.5	3.8
Japan	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	-0.4	0.6	0.9
Norway	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
Sweden	41.7	-3.2	-0.7	0.3	1.0
Switzerland	39.5	0.1	0.8	0.0	-0.8
United Kingdom	76.7	-7.6	-5.6	3.2	8.8
United States	92.7	-9.5	-6.8	4.8	11.6
Average (PPP-weighted)	97.3	-6.3	-4.5	3.8	8.3
G-20	103.8	-6.9	-4.9	4.0	8.9
Higher debt	106.0	-7.1	-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.

* 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 losses from financial sector support.

**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	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	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.

* 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 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.[51] 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.[52]

Large depreciations 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 captures valuation changes due to exchange rate movements (see footnote 1 in Table 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.[53]

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 1; Figure 1). Given the broadly secular decline in interest rates, the movements in the differential appear to follow closely those in nominal GDP growth (albeit in the opposite direction), with a sharp rise during the recessions (Figure 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 2). For the advanced economies, standard

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[51] 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; p_t is primary balance as a share of GDP during t; i is nominal interest rate; γ 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.

[52] 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.

[53] 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).

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.

Table 1. Interest Rate-Growth Differential:
Selected Countries and Country Groups for Different Periods[1]
(Percent)

Country	1981-1990	1991-2000	2001-2008	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 $((\rho-\gamma)/(1+\gamma))$ where $\rho=(1-\alpha)\varepsilon + i$; α is the share of domestic currency debt in total debt outstanding at t-1; ε 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 $((\rho-\gamma)/(1+\gamma))$, except for Greece and Portugal where $((i-\gamma)/(1+\gamma))$ is reported due to lack of data on foreign currency denominated debt.
[2] For emerging economies, data are available from 1994 at the earliest.
[3] Simple averages.

Figure 1. Historical Movements of *r-g* in Selected Advanced Economies
(Percent)
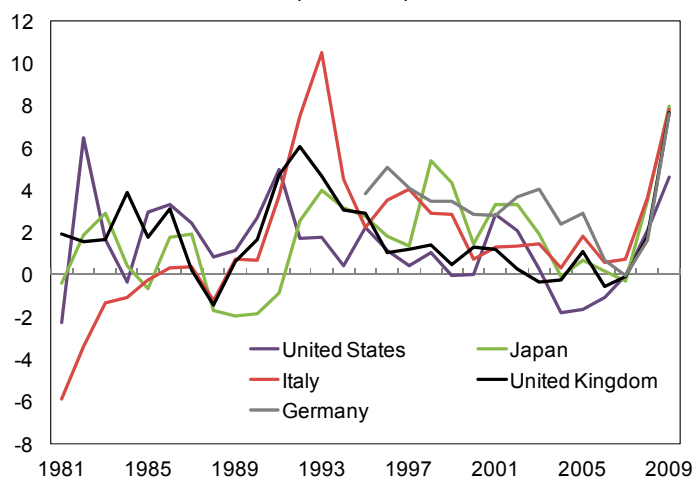
Source: IMF staff estimates.

Figure 2. Interest Rate-Growth Differential and its Components: The United States
(Percent)
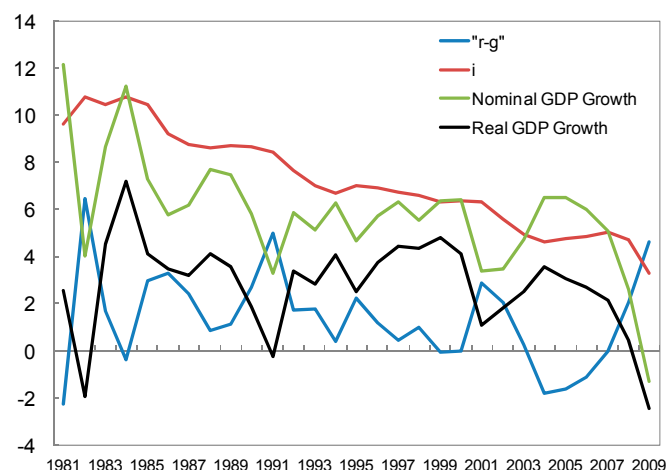
Source: IMF staff estimates.

Table 2. Rank Correlation Coefficients of Decadal Average Differential within 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 and the numbers in parentheses are p-values. The null hypothesis is that the decadal averages of the *r-g* are independent.

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 (Kumar and Woo, 2010); 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 3): the larger the public debt ratio, the higher tends to be the differential.[54] 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 60–90 percent (1.4 percentage points). A comparison based on the differentials averaged over subsequent three years yields similar results.

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

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

	Public Debt-to-GDP			
	Less than 30	30-60	60-90	Above 90
	(Based on annual observations on *r-g*)			
Interest-Growth differential (*r-g*), average	-0.07	0.61	1.44	3.20
	(Based on average of *r-g* in subsequent 3 years)			
Interest-Growth differential (*r-g*), average	1.06	0.73	0.94	2.91

Source: IMF staff estimates. The differential corresponds to $((\rho-\gamma)/(1+\gamma))$, as discussed in Table 1.

**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;[55] see Figure 3). However, the *short-term* effects on
r-g of fiscal consolidation can be ambiguous because consolidation generally adversely
affects growth in the short run, though it is widely accepted that reducing debt tends to lower
interest rates, leading to increased investment and growth in the longer run.

Figure 3. Interest-Growth Differentials Before and After Large Fiscal Consolidations
(Percentage points)
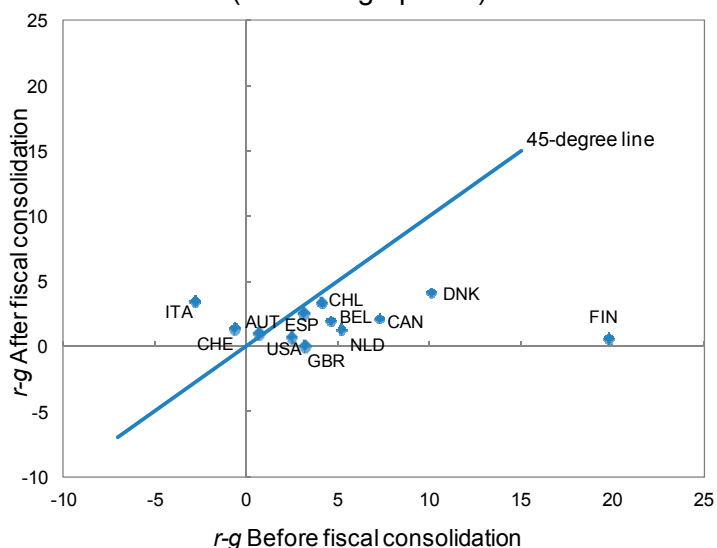
Source: IMF staff estimates. Data on large fiscal adjustment episodes are from "Strategies for Fiscal Consolidation in the Post-Crisis World," (IMF, 2010a).

[55] A favorable *r-g* can of course also affect the fiscal adjustment outcome. However, in the top largest debt
reduction episodes in advanced economies, a primary deficit reduction was the main factor (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.[56] The analysis focuses on G-7 economies during and since the global financial crisis using monthly market expectations of economic and fiscal fundamentals.[57] It provides evidence suggesting a stable relationship between sovereign CDS and 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-run comovement is inferred by cointegration 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 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. In order 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:[58]

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

where the dependent variable is the change in the CDS spread from month t-1 to month t; $\Delta E_t fiscal$ 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

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[56] 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).

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

[58] 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.

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 1 and Figure 1). Financial and

Table 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 in sequence the reported variables.

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 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.[59]

Figure 1. Development of CDS Spreads and Expected Budget Deficit
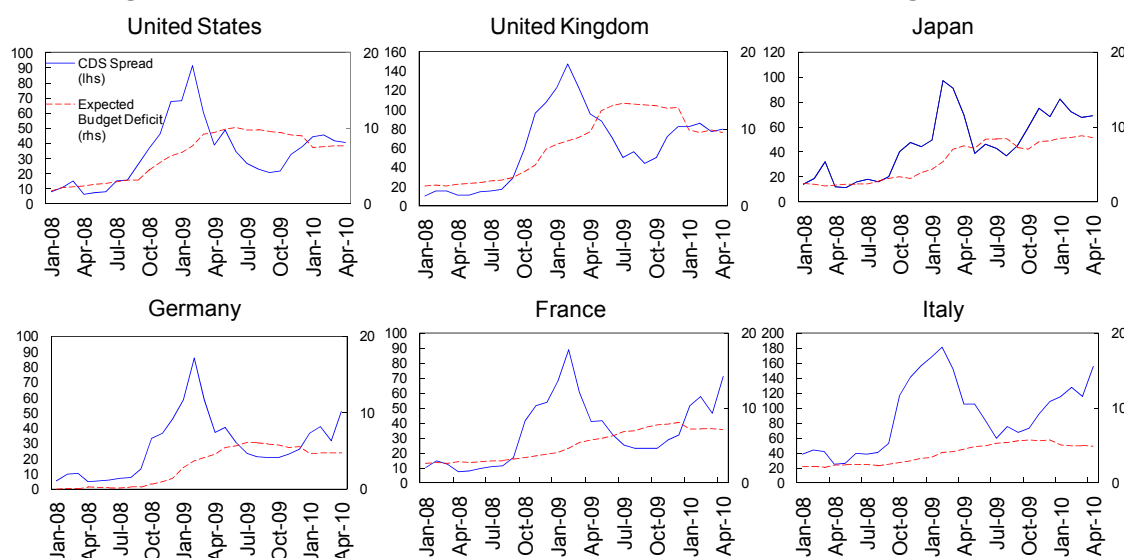
Source: Datastream and Consensus forecast.

[59] Ongoing work has replicated the above analysis for each individual advanced country (including the EA-4) using the Economist Intelligence Unit (EIU) monthly forecast of expected deficit. Results suggests that for the EA-4, residuals are much larger than for large advanced countries, suggesting that market sentiment plays a much larger role for the former economies.

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 run due to positive fiscal multipliers, but these effects are reversed over the longer term (Blanchard and Perotti 2002; Spilimbergo and others, 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 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 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.

Figure 1. Unemployment Rate during Large Fiscal Adjustments: Advanced Economies (Percent)
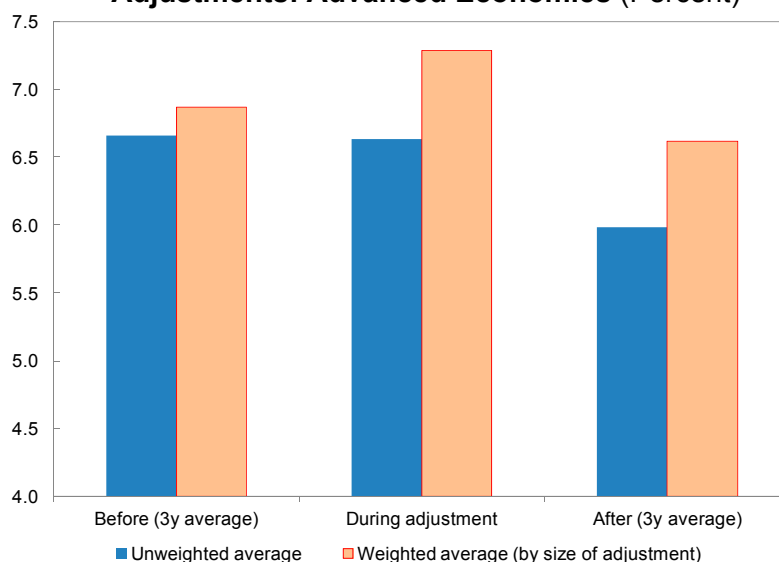
Sources: IMF staff estimates.
Note: Large fiscal adjustments as defined in IMF (2010a).

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.[60] However, substantial fiscal adjustment can be associated with relatively small changes in income inequality if expenditure reductions are accompanied by efforts to better target these benefits—as in Denmark, Germany, and Sweden.[61] 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 III.C, Figure 25). In contrast to expenditure cuts, revenue measures, in particular those related to income and wealth, are likely to reduce income disparities due to progressive tax systems in advanced economies (OECD, 2008b).[62] However, if taxes are already high, efficiency considerations place a limit on how much adjustment should be achieved through tax adjustment.

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

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

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

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 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

Figure 2. Unemployment Rate during Large Fiscal Adjustments—Developing and Emerging Economies
(Percent)
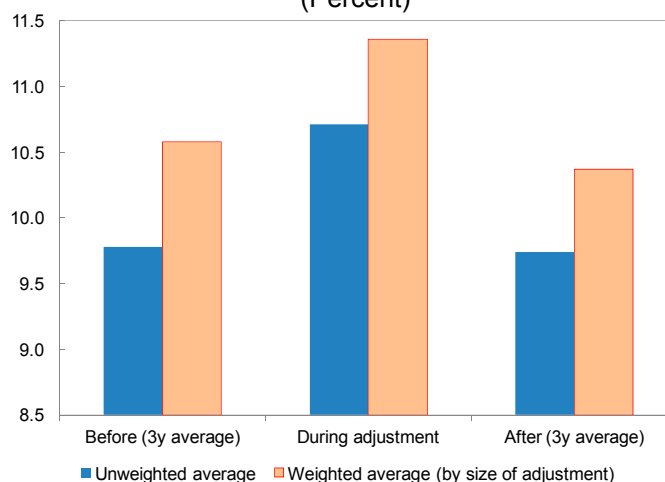
Source: WEO and staff estimates.
Note: Large fiscal adjustments as defined in IMF (2010a).

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 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 (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.

Figure 3. Emerging Markets: Large Fiscal Adjustments
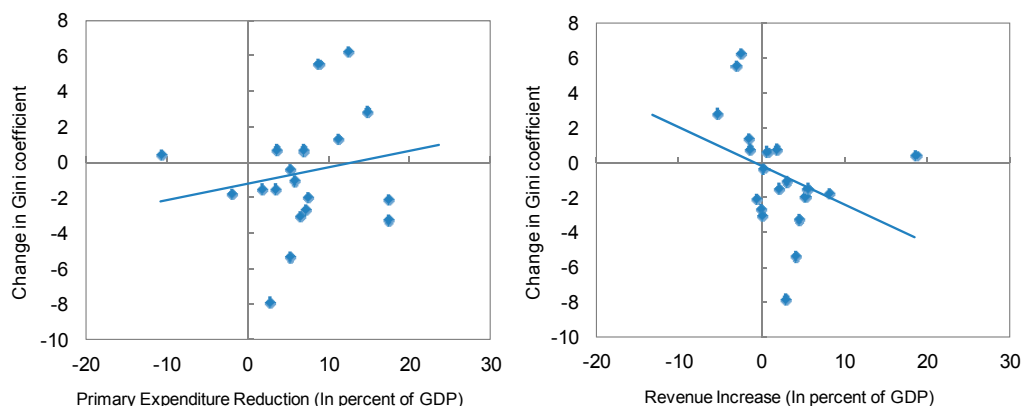
Source: IMF staff estimates. Data on large fiscal adjustments as reported in IMF (2010a); data on Gini coefficients are taken from WIDER database.
Note: Positive values for a change in Gini coefficient denote an increase in income inequality.

Appendix 4. Risks to Medium-term Public Debt Trajectories

The analysis of near-term rollover risks in Chapter IV 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, 2007). 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 1 and 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 1 and 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 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 95th 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. First, shocks arising from the difficulty in designing and

implementing large fiscal adjustments. Consolidations involve unavoidable conflicts on 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 run, as reflected in the meaningful widening of the fan charts (middle panel of Figures 1 and 2). For example, the probability that the public debt-to-GDP ratio in Greece exceeds 150 percent of GDP by 2015 rises to about 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.

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

Greece: Baseline

United Kingdom: Baseline

Greece: Implementation Risk

United Kingdom: Implementation Risk

Greece: Financial Sector Risk

United Kingdom: Financial Sector Risk
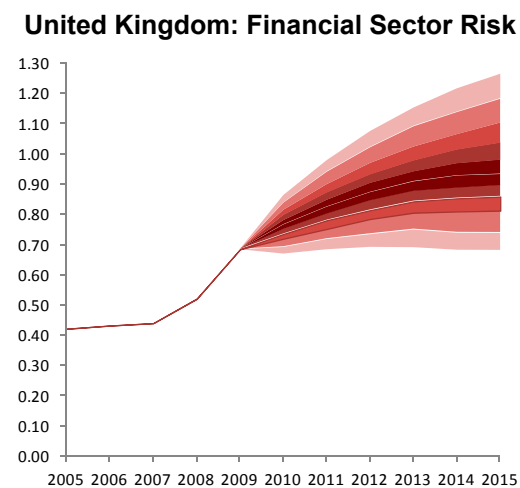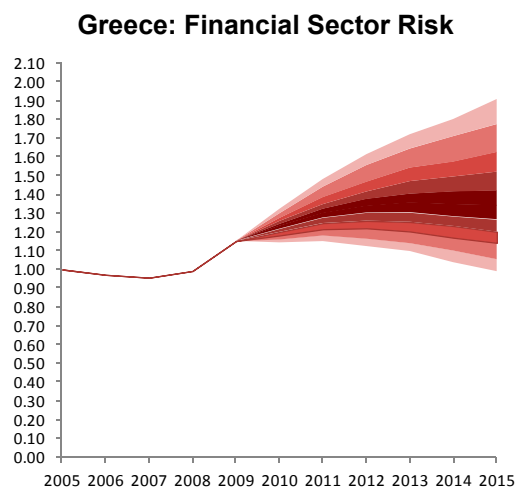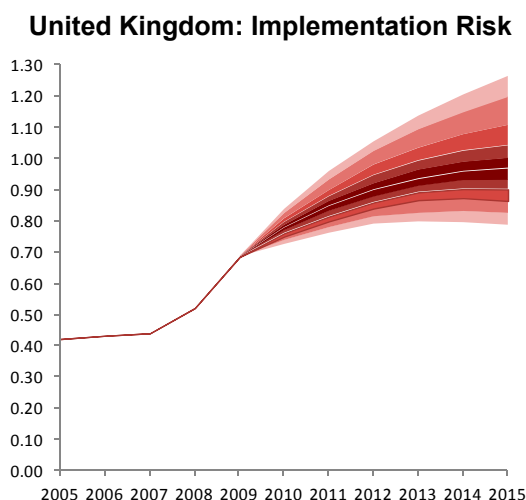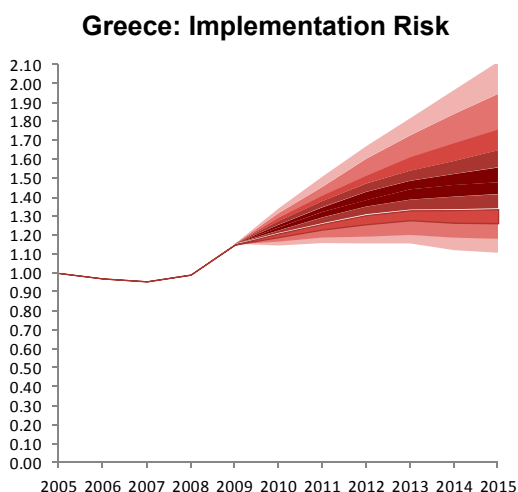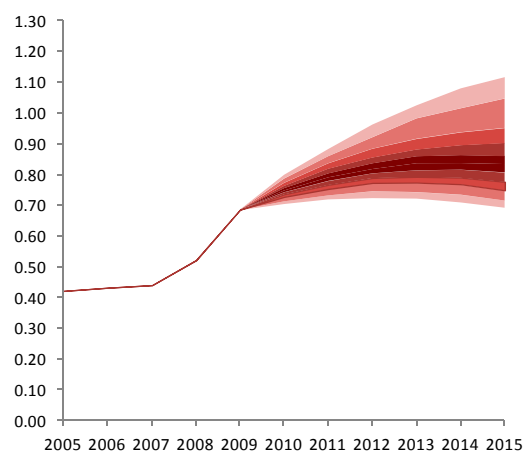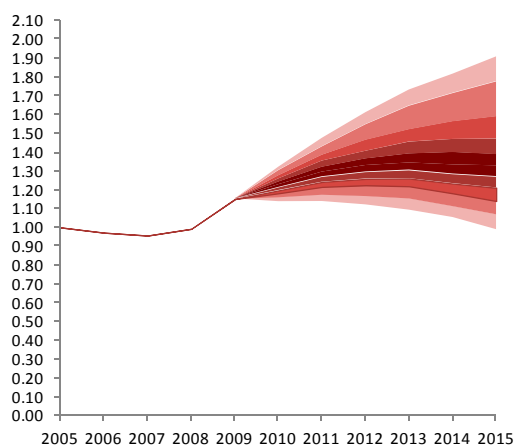
Source: October 2010 *WEO* and IMF staff calculations.

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

Germany: Baseline

United States: Baseline

Germany: Implementation Risk

United States: Implementation Risk

Germany: Financial Sector Risk

United States: Financial Sector Risk
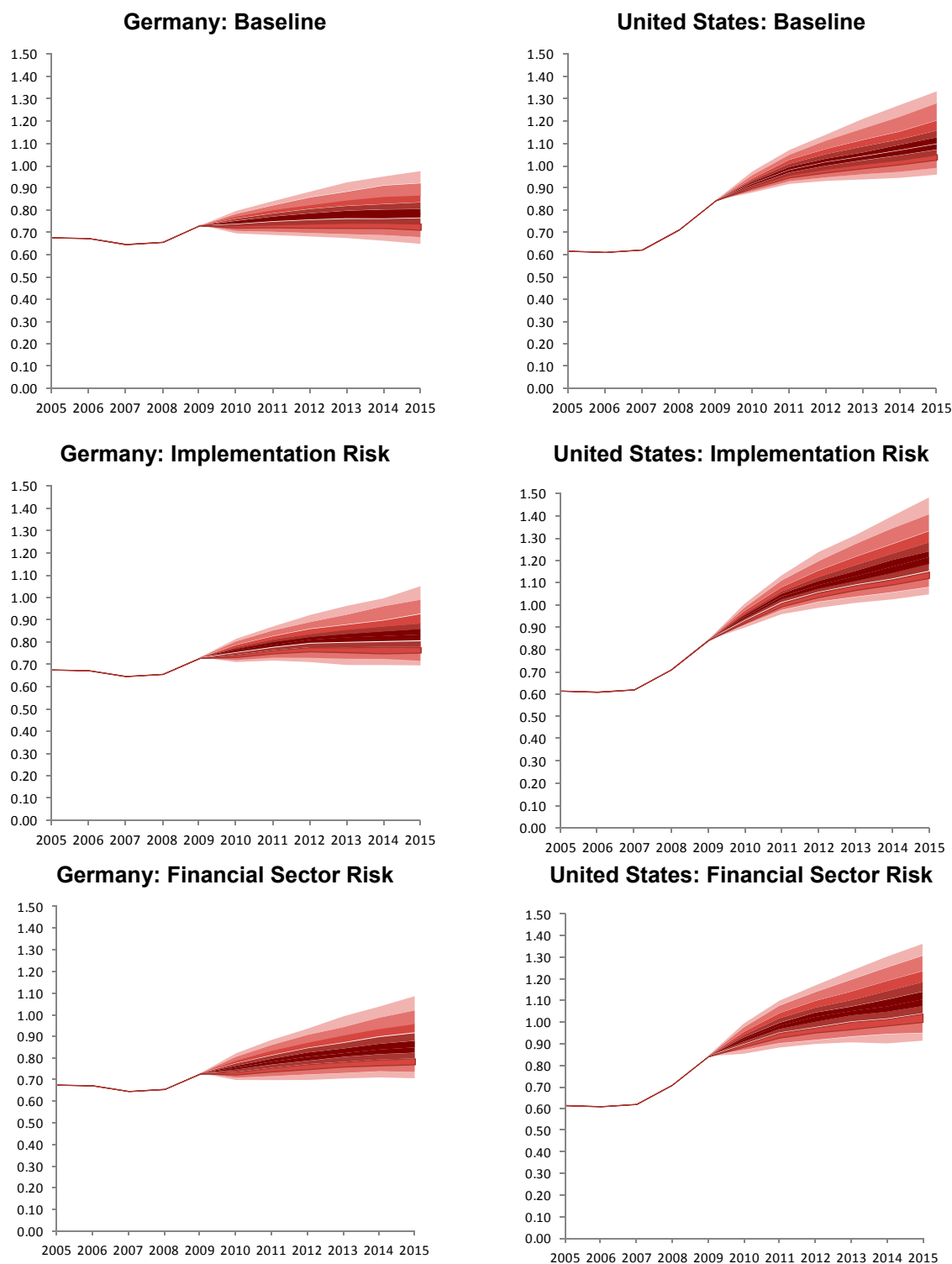
Source: October 2010 *WEO* and IMF staff calculations (see note in Figure 1).

METHODOLOGICAL AND STATISTICAL APPENDIX

This appendix comprises four sections: (1) assumptions; (2) data and conventions; (3) economy groupings; and (4) 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 classification of countries in the various groups presented in the *Fiscal Monitor* is summarized in the third section. 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.

I.   Fiscal Policy Assumptions

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

The short-term fiscal policy assumptions used in the *World Economic Outlook* (*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 structural primary balance is assumed, unless indicated otherwise. Below are the specific assumptions relating to selected economies.

Argentina. The 2010 forecasts are based on the 2009 outturn 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 2010 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: Q1.

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, and so there is no significant fiscal impulse. Stimulus is partially withdrawn in 2011, resulting in a negative fiscal impulse of about 1 percent of GDP (reflecting both higher revenue and lower spending).

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 policies agreed to between IMF staff and the authorities in the context of the Stand-By 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, coming into positive territory 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 due mostly 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 have still 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 during June–July. The IMF staff projections are based on the authorities' estimates of the policy scenario including the above medium-term fiscal

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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 last year 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 percent of GDP during 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.

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 onwards. 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).

II. 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 IMF's Fiscal Affairs and Monetary and Capital Markets Departments' database on public interventions in the financial system, 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, as well as follow-up questionnaires, 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.

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 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*:

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.

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 those 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.

III.   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 (continued)

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
			Central African Rep.	Niger	Congo, Republic of	
Philippines	Poland	Peru	Chad	Papua New Guinea	Ecuador	
Thailand	Romania		Comoros	Rwanda	Equatorial Guinea	
	Russia		Congo, Dem. Rep. of	Sao Tome & Principe	Gabon	
	Turkey		Cote d'Ivoire	Senegal	Indonesia	
	Ukraine		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	

IV.   Statistical Tables

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	-1.9	-5.4	-4.2	-3.3	-2.3	-1.5	-1.5	-1.4
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 market 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

Source: October 2010 *WEO* and IMF staff calculations.

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	3.7	1.2	-2.1	-1.1	-0.5	0.4	0.9	0.8	0.8
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 market 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

Source: October 2010 *WEO* and IMF staff calculations.

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	-4.2	-7.5	-11.3	-9.5	-8.6	-7.3	-6.6	-6.4	-6.2	-5.9
Israel	-2.2	-1.6	-3.5	-5.5	-4.5	-3.7	-2.9	-2.2	-2.2	-2.1
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	2.7	1.8	2.0	0.4	-2.0	-3.3	-3.2	-2.3	-1.8	-0.8
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 market 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	-1.7	-1.5	-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

Source: October 2010 *WEO* and IMF staff calculations.
[1] For details, see Methodological Appendix, Section II (Data and Conventions).
[2] Cyclically adjusted overall balance excluding financial sector support recorded above the line.

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	-3.9	-7.3	-10.8	-8.0	-6.1	-3.8	-2.7	-2.1	-1.3	-0.7
Israel	1.9	2.5	-0.3	-2.2	-1.4	-0.9	-0.2	0.3	0.1	0.1
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	4.1	3.1	3.4	1.8	-0.3	-1.3	-1.1	-0.1	0.3	1.3
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 market 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	-1.5	-1.8	-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	-3.2	-3.4	-2.5	-1.3	-0.7	-0.5	-0.4
Advanced	0.0	0.3	-1.6	-4.0	-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	1.5	0.5	-2.0	-1.8	-1.0	-0.1	0.4	0.6	0.8

Source: October 2010 *WEO* and IMF staff calculations.
[1] For details, see Methodological Appendix, Section II (Data and Conventions).
[2] Cyclically adjusted overall balance excluding financial sector support recorded above the line.

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	45.6	44.6	43.8	42.4	42.0	41.3	40.3	39.1	38.9	38.6
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	39.4	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 market 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	17.9	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	42.4	40.7	39.9	39.4	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

Source: October 2010 *WEO* and IMF staff calculations.

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	44.4	44.4	41.9	36.9	37.8	38.0	38.0	37.5	37.3	37.1
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 market 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

Source: October 2010 *WEO* and IMF staff calculations.

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	76.5	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	84.4	77.6	75.4	77.6	76.1	74.3	71.6	68.6	65.9	63.2
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 market 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

Source: October 2010 *WEO* and IMF staff calculations.

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	79.7	72.9	70.8	72.9	71.4	69.6	66.9	63.9	61.2	58.5
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 market 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

Source: October 2010 *WEO* and IMF staff calculations.

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