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The State of Public Finances: A Cross-Country Fiscal Monitor

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The State of Public Finances: A Cross-Country Fiscal Monitor

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Executive Summary

This Cross-Country Fiscal Monitor *of the IMF's Fiscal Affairs Department focuses on the policy response to the global crisis, covering macrofiscal indicators and factors affecting them, measures to support financial and other sectors, effects of fiscal policy on the real economy, evolution of market indicators of fiscal risk, and actions undertaken by countries to ensure medium-term fiscal solvency.*

The global crisis is having a dramatic impact on fiscal positions around the world. Among the G-20, fiscal deficits in both 2009 and 2010 are expected to be 5½ percent of GDP above their pre-crisis (2007) levels. Crisis-related discretionary measures are estimated at 2 percent of GDP in 2009 and 1.6 percent of GDP in 2010, with the rest of the change in fiscal balances reflecting primarily the automatic fiscal stabilizers and revenue losses associated with extraordinary declines in asset and commodity prices. Tax stimulus measures—which account for a little less than one-quarter of planned discretionary stimulus this year in the advanced G-20—were implemented relatively quickly and their impact is already being felt in the fiscal accounts. Expenditure measures, however, have proceeded more slowly, reflecting normal budgetary controls and typical startup delays in new programs. The pace of stimulus spending appears to have accelerated recently, but comprehensive assessments are difficult, as public reporting by governments of discretionary fiscal stimulus plans and implementation is lacking in many countries. Government support to the financial and other sectors has been sizable, although in most countries actual disbursements have been well below program ceilings, as financial conditions have not been as severe as feared when many of these programs were announced.

Fiscal balances are expected to improve over the next few years as the global economy recovers, but the outlook for the public debt is more worrying in many countries. In particular, debt ratios in the advanced G-20 countries are projected to widen by about 40 percentage points of GDP by 2014, an increase not seen since the Second World War.

Fiscal policy should continue to support economic activity until economic recovery has taken hold (and, indeed, additional discretionary stimulus may be needed in 2010). However, the positive growth impact of fiscal expansion would be enhanced by the identification of clear strategies to ensure that fiscal solvency is preserved over the medium term. Without such strategies rising interest rates and risk premiums could erode the effectiveness of stimulus measures. Few countries have yet articulated the needed medium-term policies in adequate detail.

This *Cross-Country Fiscal Monitor* is the first of a series of regular updates on global fiscal developments and prospects, based on the approaches introduced in *The State of Public Finances: Outlook and Medium-Term Policies After the 2008 Crisis*. The *Monitor* will also explore topical fiscal questions. Consistent with the Fund's cross-country surveillance mandate, it will examine developments in a variety of country groups, with somewhat more emphasis on G-20 countries in light of their importance for global developments. Two main issues of the *Monitor* are envisaged—in April and October, shortly following the circulation of the IMF's *World Economic Outlook* (WEO). Shorter quarterly updates could be prepared in between, as circumstances warrant.

I. Introduction

This edition of the *Cross-Country Fiscal Monitor* draws on Fund staff projections for the July 2009 WEO Update and supplements analysis for the surveillance note for the Meeting of G-20 Deputies in Basel on June 27.[2] Section II provides an update of the fiscal impact and policy response to the crisis. Section III discusses policy challenges and exit strategies.

II. The Fiscal Policy Response to the Crisis: An Update

Fiscal policy response in the G-20 countries

1. **The crisis is having a substantial impact on fiscal positions in the G-20 countries**. Overall deficits are projected to increase by 5.5 percentage points of GDP in 2009 and 2010, both with respect to 2007 pre-crisis levels and excluding losses from financial sector support (Table 1), broadly unchanged from estimates prepared three months ago.[3] In advanced G-20 economies, fiscal deficits in 2009-10 are now estimated to be somewhat larger, in some cases reflecting weaker growth prospects in 2009 before a stronger recovery in 2010.[4] By contrast, changes in fiscal balances are now expected to be smaller in other G-20 countries, particularly those where commodity revenues are important.

Table 1. G-20 Countries: Fiscal Expansion
(in percent of GDP, change with respect to pre-crisis year 2007)

	2009			2010			Fiscal Expansion	
		of which:			of which:		Change from April WEO	
	Overall Balance	Crisis-Related Discretionary Measures	Other Factors	Overall Balance	Crisis-Related Discretionary Measures	Other Factors	2009	2010
PPP GDP-weighted average	-5.5	-2.0	-3.5	-5.5	-1.6	-3.8	0.0	-0.1
Advanced countries	-5.9	-1.9	-4.0	-6.2	-1.6	-4.5	-0.1	-0.2
Emerging and Developing G-20	-5.0	-2.2	-2.8	-4.4	-1.6	-2.8	0.0	0.1

Source: Staff estimates based on the July 2009 WEO update.

2. **The pace of announcements of new crisis-related discretionary measures has slowed**. Estimates of the impact of these stand at 2 percent of GDP in 2009 and 1.6 percent of GDP in 2010. Spending represents more than three-quarters of stimulus planned for 2009, but its share is expected to drop to around two-thirds in 2010, as some projects are completed

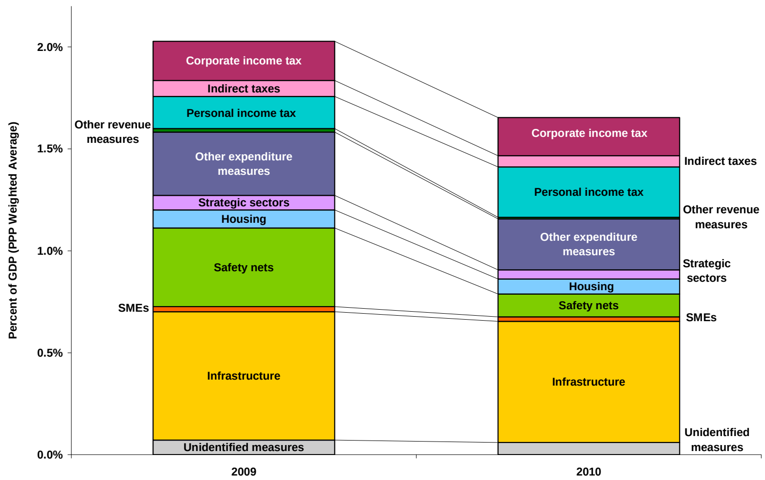
[2] See http://www.imf.org/external/pubs/ft/weo/2009/update/02/index.htm and external/np/g20/070809.htm.

[3] See Appendix Figure 1, which shows how staff's assessment of growth and fiscal balances has evolved with the unfolding of the crisis. Projections through 2014 reflect a substantial narrowing of output gaps, and for most countries, assume fiscal adjustment, although this may not reflect specified policy measures in the outer years.

[4] See Appendix Tables 1 and 2 for country-by-country information. In Australia and the United Kingdom, new national budgets were tabled. Changes for Brazil reflect, in part, a change in coverage of the fiscal accounts (exclusion of Petrobras). The estimates also reflect corrected figures for stimulus planned by Korea in 2010.

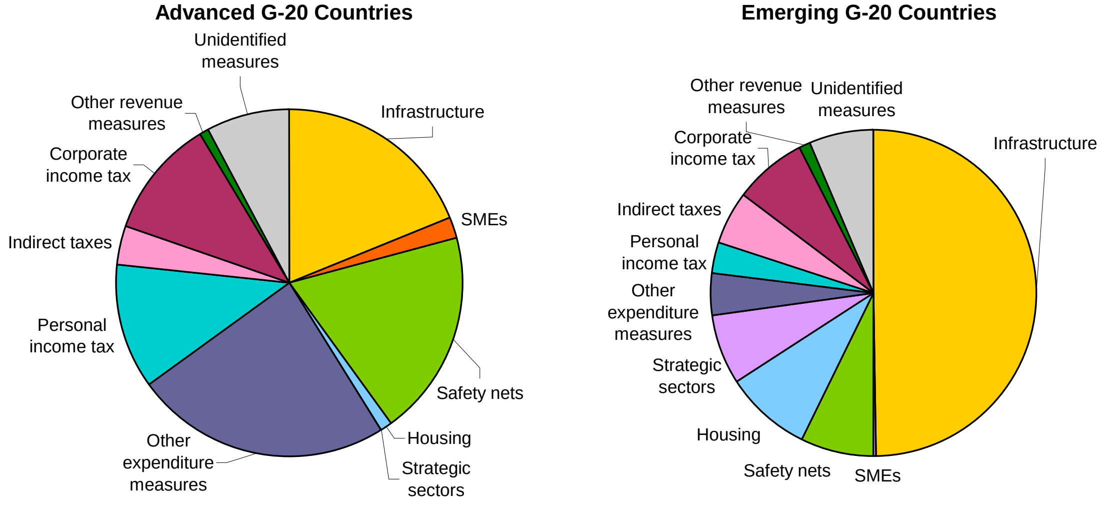
(Figure 1).[5] Emerging G-20 countries have announced somewhat larger stimulus packages for 2009, on average, than advanced G-20 countries. This reflects smaller automatic stabilizers and consequently greater need, as well as substantial fiscal space in key emerging market countries. China, Russia, Saudi Arabia, and South Africa have introduced large packages. Emerging market discretionary measures are also more heavily weighted to infrastructure investment and less focused on income tax cuts (Figure 2).

Figure 1. G-20 Countries: Composition of Fiscal Stimulus Measures 1/



1/ Where explicit information was not available for 2010, the 2009 composition was assumed.

Figure 2. G-20 Countries: Fiscal Stimulus by Category, 2009–10



Source: IMF staff estimates.

[5] As most G-20 countries have not yet indicated explicitly their policy intentions for next year, estimates for 2010 reflect phased implementation of stimulus spending initiated this year and carryover of tax provisions.

3. **The more sizable overall fiscal expansion in the advanced G-20 countries reflects larger automatic stabilizers**. These reflect, in turn, larger governments (e.g., as measured by the revenue-to-GDP ratio) and a greater deterioration of output gaps (Table 2). Other factors contributing to the fiscal expansion across the G-20 include the impact of nondiscretionary effects on revenues beyond the normal cycle (e.g., the revenue impact of the extraordinary decline in commodity and real estate prices and financial sector profits), as well as noncrisis-related discretionary spending or revenue measures.

Table 2. G-20 Countries: Automatic Stabilizers and Other Factors
(in percent of GDP and change in percentage points)

	Revenue-to-GDP Ratio	Change in Output Gaps 1/		Contribution of Automatic Stablizers 1/		Contribution of Other Factors 1/	
	2007	2009	2010	2009	2010	2009	2010
Total	31.5	-5.1	-5.3	-1.9	-2.0	-1.6	-1.9
Advanced G-20 countries	35.0	-5.7	-5.7	-2.4	-2.5	-1.6	-2.1
Emerging market G-20 countries	26.2	-4.1	-4.7	-1.1	-1.2	-1.7	-1.5

Source: Staff estimates based on the July 2009 WEO Update.

1/ With respect to 2007.

Assessing the impact of fiscal expansion

4. **A comprehensive progress report on the implementation of stimulus measures is difficult, as specific information is so far limited**. Only a few G-20 countries are providing detailed reports on stimulus execution, for example, through dedicated websites (Canada, France, and the United States). In the United States, stimulus spending is picking up, with US$64 billion paid out through mid July, 35 percent of the amount available. The amount of stimulus has roughly doubled each month since February (chart). The pace of social security spending has been relatively quick, while expenditures in energy and transportation have been slower (just 1 percent of planned infrastructure spending has taken place).[6] Together with over US$50 billion worth of tax breaks provided, 41 percent of the expected annual U.S. stimulus (US$283 billion) has been paid out, or 0.8 percent of GDP. In Canada, 81 percent of the planned stimulus for 2009 has been committed (available to spend).[7] In France, 60 percent of planned 2009 stimulus has been paid out—full payout of tax credits and 26 percent payout of expenditures. Specific reporting on stimulus implementation in other countries has not gone much beyond initial announcements. Tax cuts were enacted at the outset, and their impacts on the fiscal accounts are being felt broadly as expected, with

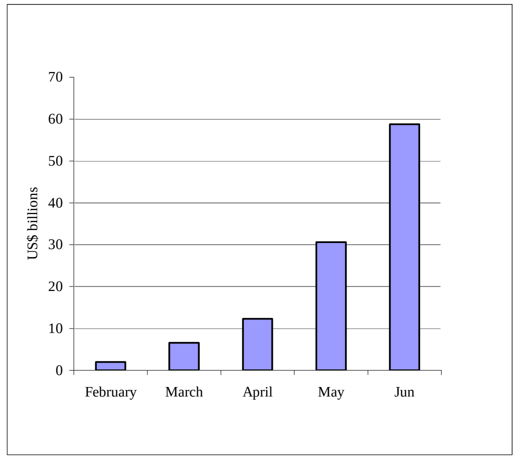
[6] The U.S. stimulus package includes a number of expanded or new programs (e.g., highway or water projects) that imply a slower pace of spending. Spending that builds on existing programs, such as transfers to individuals and some aid to U.S. states (e.g., Medicaid), proceeds more quickly.

[7] Commitment rates range from 59 percent for an innovation initiative to 73 percent for infrastructure spending to 95 percent for support to the unemployed.

reports of correspondingly lower revenues (particularly for targeted tax breaks).[8] From regular fiscal reports, transfers and capital spending have risen in comparison with past years in several G-20 countries (e.g., Argentina, Canada, China, Indonesia, Korea, Saudi Arabia), likely in connection with stimulus initiatives. In others, stimulus spending has been less visible. In all countries, the pace of spending is affected by procedures for budgetary allocations, transfers to subnational governments, procurement, and payment to contractors, even for "shovel ready" projects.[9]

5. **The growth impact of the overall fiscal expansion, once fully implemented, may be sizable**. Given uncertainty on the size of fiscal multipliers, growth impacts are estimated using ranges of multipliers (Table 3 and Box 1). Estimates for growth impacts range from 1.2 to 4.7 percentage points in 2009 and from 0.1 to 1.0 percentage point in 2010, both with respect to the previous year.[10] These estimates consider the effect of spillovers to other countries (via imports), a key element of the crisis response and efforts to pursue coordinated global action. The estimates are broadly consistent with the findings of structural models, although they reflect the impact of the *full* fiscal expansion and not only the discretionary stimulus. The effectiveness of discretionary measures in stimulating activity was a key topic at an IMF Conference on Fiscal Policy held in June, which also considered the length of implementation lags and what can be done to reduce them, the functioning of automatic stabilizers and the tradeoffs in enhancing them, and the role of fiscal rules and independent councils in anchoring expectations of government solvency.[11]

Monthly Implementation of U.S. Stimulus
(in US$ billions per month)



Sources: Staff estimates; http://www.recovery.gov; press reports.

[8] Some G-20 countries are also experiencing broadly lower-than-expected revenues (i.e., below the initial estimates of the magnitude of the automatic stabilizers), due to worse-than-expected economic conditions and likely worsening tax compliance. See the Staff Position Note on Collecting Taxes During an Economic Crisis: Challenges and Policy Options (http://www.imf.org/external/pubs/ft/spn/2009/spn0917.pdf).

[9] Many of these procedures reflect public financial management reforms aimed to improve transparency, accountability, and expenditure quality.

[10] The composition of the fiscal expansion has an impact on the growth estimates. For example, the fiscal contraction in the emerging market G-20 countries in 2010 reflects both higher revenues and expenditures. The positive growth impact, in turn, reflects the effects of higher capital spending, which has a larger multiplier.

[11] See http://www.imf.org/external/np/seminars/eng/2009/fispol/index.htm for a summary and presentations.

Box 1. Taking Stock of Fiscal Multipliers

Fiscal multipliers measure the effectiveness of fiscal policy in stimulating output.[1] The size of multipliers depends on the type of policy—spending increases or tax cuts—and country circumstances. Two broad methodologies are applied to compute multipliers:

- Structural models, based on household and firm optimizing behavior, such as the IMF's Global Integrated Monetary and Fiscal Model (GIMF).
- Empirical estimations (VARs, narrative studies, micro studies, cross-country analyses), which allow for investigating real events, but face the challenge of identifying exogenous effects of fiscal policy.

Estimates of multipliers vary widely. According to structural models, multipliers vary from 3.9 to -1.3 (Al-Eyd and Barrell, 2005, Cogan et al, 2009, Dalsgaard et al, 2001, Freedman et al, 2008). For empirical studies, estimates range from 3.8–5 (Perotti, 2006, Romer and Romer, 2008) to -1.5 (Perotti, 2005).

Increasing spending—either for consumption or investment—appears to be more effective than cutting taxes. While government spending results in a direct increase in aggregate demand, tax cuts might not be fully spent (although increased saving may have a beneficial impact over the medium term in repairing household balance sheets). The GIMF yields low fiscal multipliers for cuts in labor taxes and lump-sum transfers (0.2–0.5); and high multipliers for government expenditure (1.6–3.9) and targeted transfers (0.5–1.7). Zandi (2008) finds larger fiscal multipliers for infrastructure spending and targeted transfers (1.7) than for general tax cuts (0.3). Finally, a 2003 UK Treasury study based on the European Commission's QUEST model finds larger one-year fiscal multipliers for government spending (0.3–0.7) than for tax cuts (0–0.3). This said, as noted earlier, it often takes long to activate spending without wasting public resources, especially for new programs.

Multipliers are larger when monetary policy is accommodative. In the GIMF, fiscal multipliers are 2 to 3 times larger with accommodative monetary policy than without.[2]

Fiscal policy action is also more effective when coordinated across countries. The GIMF finds multipliers of 3.7 for the United States under coordinated fiscal policy, compared to 2.4 without coordination. The channel is the "leakage" of the fiscal stimulus into demand for imports. Empirical work confirms that more open economies have lower fiscal multipliers than those less exposed to international trade.

Lack of policy credibility (real or perceived) lowers multipliers by increasing risk premia and raising real interest rates. The GIMF shows that, depending on the extent of fiscal sustainability problems, higher public spending or tax cuts can have a negative impact on output by inducing more-than-offsetting increases in private saving.

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[1]See http://www.imf.org/external/pubs/ft/spn/2009/spn0911.pdf for further discussion.

[2]The multipliers derived in GIMF simulations are in the absence of automatic stabilizers.

Table 3. G-20 Countries: Impact of Fiscal Expansion on Growth 1/
(change in percentage points)

	2009	2010	Average
Low-high range impact 2/ 3/			
G-20 total	1.2 - 4.7	0.1 - 1.0	0.7 - 2.8
Advanced G-20 countries	1.3 - 4.4	0.1 - 1.1	0.7 - 2.7
Emerging market G-20 countries	1.1 - 5.0	0.0 - 0.8	0.6 - 2.9

Source: IMF Staff estimates based on the July 2009 WEO Update.

1/ Fiscal expansion and growth are calculated with respect to the previous year. Fiscal expansion is measured as the change in the real overall fiscal balance between the two years in relation to real GDP of the previous year.
2/ The range of growth estimates reflects different assumptions on fiscal multipliers. The low set included a multiplier of 0.3 on revenues, 0.5 on capital spending and 0.3 on other spending. The high set included a multiplier of 0.6 on revenues, 1.8 on capital spending and 1 for other spending. For calculation of the growth impact of total fiscal expansion a weighted average of current and capital expenditure multipliers was used.
3/ For the calculation of growth impacts, the change of the overall fiscal balance was adjusted: for Russia and Saudi Arabia, the change in non-oil revenues was used (rather than total revenues); for Saudi Arabia, the change in discretionary measures was used (rather than total expenditures); for the United States and Japan, estimates of losses from financial sector support were excluded.

Impact of the crisis on non G-20 countries

6. **The crisis has also affected fiscal balances of countries outside the G-20.** Projected increases in overall fiscal deficits in smaller advanced countries of 7.8 percentage points of GDP in 2009 and 8.8 percentage points in 2010 (both with respect to 2007) are larger than in the advanced G-20 (5.9 and 6.2 percentage points of GDP in 2009 and 2010, respectively).[12] Higher primary spending explains just under 60 percent of the expansion. The fiscal deficits of emerging and developing countries are also projected to increase by 4.6 percentage points of GDP on average in 2009 compared to pre-crisis levels in 2007, with a gradual recovery from 2010 (Figure 3).

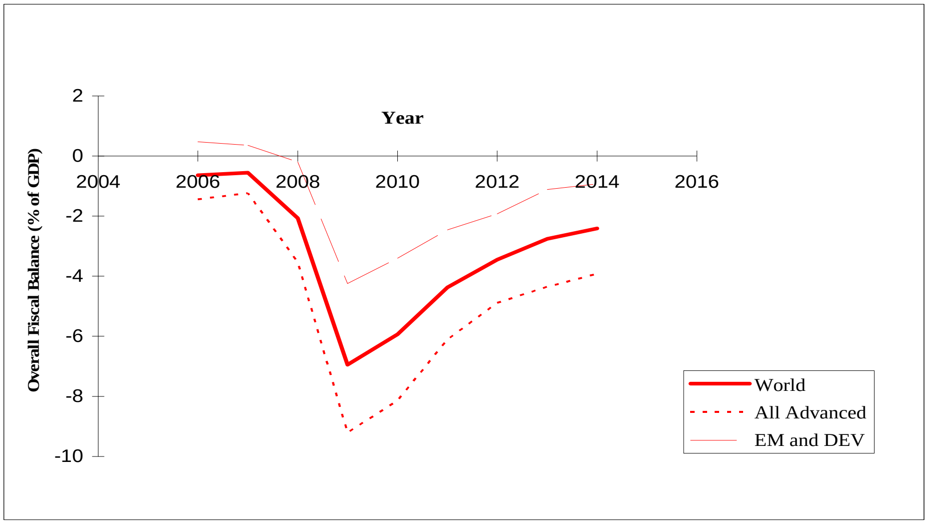
7. **Much of the increase in fiscal deficits in emerging market and developing countries reflects a sharp decline in revenues (including due to lower commodity prices), not fully matched by lower spending.** In a sample of 22 non-G-20 emerging market countries, output gaps are estimated to turn from a PPP GDP-weighted average of 2.5 percent of potential output in 2008 to -0.9 percent in 2009 and to -2.4 percent in 2010.[13] Some of these countries entered the crisis with relatively sound fundamentals and room to allow automatic stabilizers to operate or even to use discretionary stimulus. Most, however, have faced significant constraints. Several benefited from buoyant tax collections in recent years (and favorable access to financing) and sharply increased their spending (Figure 4).

[12] The smaller advanced economies included Austria, Belgium, Denmark, Finland, Greece, Iceland, Ireland, the Netherlands, New Zealand, Norway, Portugal, Spain, and Sweden.

[13] The countries in the sample were Armenia, Belarus, Bosnia & Herzegovina, Colombia, Costa Rica, Ecuador, Estonia, Georgia, Guatemala, Iceland, Jamaica, Lebanon, Lithuania, Mongolia, Pakistan, Panama, Peru, Philippines, Poland, Romania, Ukraine, and Vietnam.

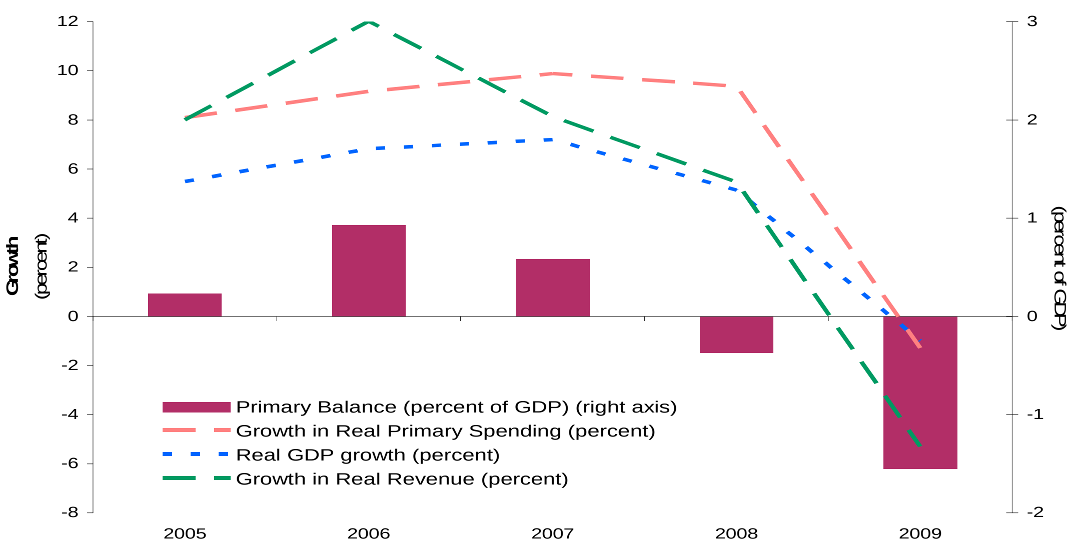
When conditions changed, revenue gains slowed, but spending growth continued. Expenditure levels are now proving difficult to sustain. Just a handful of countries from this group have announced stimulus plans for 2009.[14] Financing from the Fund and others is helping some of these countries ease the burden of adjustment in the near term.

Figure 3. Overall Fiscal Balances Worldwide
(in percent of GDP, PPP-weighted average)



Source: Staff estimates, based on the July 2009 WEO Update.

Figure 4. Revenues, Expenditures, Growth and Primary Balances in Selected Non G-20 Emerging Markets, 2004–08
(in percent of GDP, PPP-weighted average)



Source: IMF Staff estimates, based on the July 2009 WEO Update.

[14] These countries are Armenia, Costa Rica, Guatemala, Peru, the Philippines, and Vietnam.

Measures to support financial and other sectors

8. **Governments and central banks have also continued to provide direct support to the financial and other sectors**.[15] However, while support measures have been large, immediate impacts on government financing needs have been more limited. Guarantees do not require upfront government financing, and institutions providing other support measures are generally outside the government sector (central banks, state-owned financial institutions, and special corporations). Upfront government financing needs connected with financial support operations are estimated at 5.5 percent of GDP for the advanced G-20 countries and 0.4 percent of GDP for the emerging G-20 countries (Table 4).[16]

Table 4. Support for Financial and Other Sectors and Upfront Financing Need

(As of June 2009; in percent of 2008 GDP unless otherwise noted)

	Capital Injection	Purchase of Assets and Lending by Treasury	Guarantees	Liquidity Provision and Other Support by Central Bank	Upfront Government Financing
	(A)	(B)	(C)	(D)	(E)
G-20 Average	2.2	3.5	8.8	9.3	3.6
Advanced Economies	3.4	5.3	14.0	6.9	5.5
In billions of US$	1,149	1,937	4,646	2,514	1,849
Emerging Economies	0.2	0.3	0.1	13.6	0.4
In billions of US$	22	38	7	1,605	47

Source: IMF Staff estimates based on official announcement by agencies. Average are based on PPP GDP weights. Columns A, B, C, and E indicate *announced or pledged amounts, and not actual uptake*. Column D indicates the *actual changes in central bank balance sheets from June 2007 to April 2009*. While these changes are mostly related to measures aimed at enhancing market liquidity and providing financial sector support, they may occasionally have other causes, and also may not capture other types of support, including that due to changes in regulatory policies. For details, see Appendix Table 3.

9. **Financial sector support provided by governments so far has generally been considerably less than originally announced**. For example, for those advanced economies for which data are available, while the average amount allocated for capital injection was 3.4 percent of GDP, the amount utilized so far has been just over two-fifths of that (1.4 percent of GDP or US$425 billion) (Table 5).[17] The estimated utilization rate for the purchase of assets and treasury lending is even lower, at less than one-fifth of the allocated amount. This outcome appears to reflect a variety of factors including the precautionary nature of initial announcements, indications of increasing stability and improved bank liquidity, and lags in implementation of programs for recapitalization and purchase of assets. Central bank credit facilities appear also to have been taken up only to a limited extent in

[15] For details on measures announced or implemented during the fourth quarter of 2008 and the first quarter of 2009, see http://www.imf.org/external/np/g20/pdf/031909a.pdf.

[16] These figures refer to announced (or pledged) amounts. See Appendix Table 3 for country-by-country information.

[17] See Appendix Table 4 for country-by-country information.

many countries, as conditions have turned out to be less dire than expected at the time of their announcement.

Table 5. Financial Sector Support Utilized Relative to Announcement
(In percent of 2008 GDP, unless otherwise indicated) 1/2/

	Capital Injection		Purchase of Assets and Lending by Treasury	
Countries	Amount used	In percent of announcement	Amount used	In percent of announcement
G-20 total	1.1	41.8	0.9	18.9
G-20 advanced economies	1.4	42.3	1.1	18.4
In billions of US$	425	…	333	…
G-20 emerging economies	0.1	29.6	0.2	37.8
In billions of US$	7	…	13	…

Source: Staff estimates.

1/ Based on the latest information available.
2/ PPP weighted averages.

Prospects for recovery of fiscal positions

10. **Fiscal balances are expected to strengthen gradually over the medium term but the deficits are likely to remain well above their 2007 levels.** Although output gaps are projected to largely close, overall fiscal deficits remain higher in 2014, compared with 2007, by around 2½ percentage points of GDP for the advanced G-20 countries and 1½ percentage points for emerging markets (Table 6 and Figure 5, first panel). For the advanced countries, the larger overall deficits are explained by higher interest payments (by 1.7 percentage points of GDP, on average) and higher primary expenditures. For the emerging markets, the deterioration is explained by primary spending increases, while revenue gains in some countries offset sustained lower commodity revenues (from exceptionally high 2007 levels) in others. These staff projections incorporate significant structural fiscal adjustment during 2011–14, beyond the withdrawal of stimulus (1.6 percent of GDP in 2010), both in advanced G-20 countries (by 2½ percentage points of GDP) and in emerging market G-20 countries (by about 1 percentage point). This fiscal adjustment, which needs to be supported by identification and implementation of specific revenue and expenditure measures in most countries, is expected to help offset spending pressures arising from aging and health care costs (the latter due to aging as well as reasons beyond demographics) through 2014. These pressures are expected to increase in the next five years and to accelerate sharply after 2015 (see Box 2). The ultimate fiscal costs of the crisis could well be larger, however, if adjustment policies are not put in place or if downside risks materialize.

11. **Public debt is expected to continue to rise in advanced economies** (Appendix Tables 1 and 5 and Figure 5, second panel). Debt ratios in the G-20 countries as a whole are

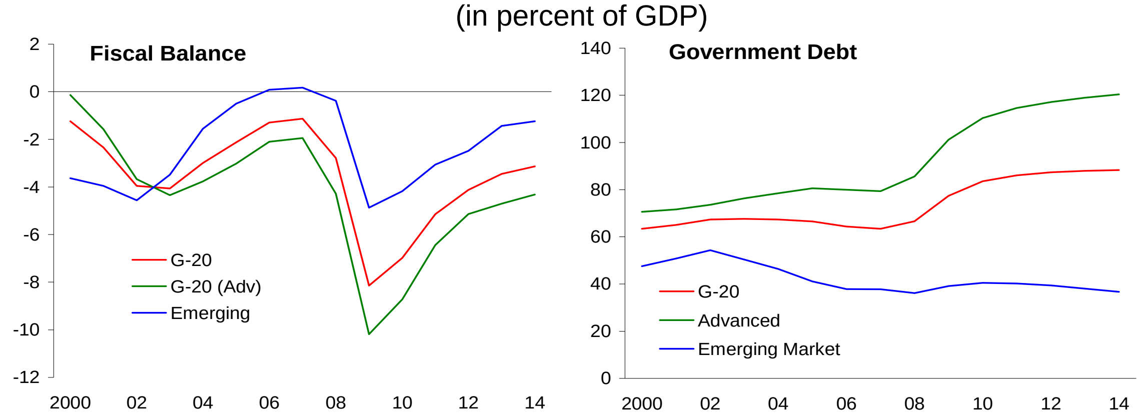
expected to stabilize at around 85 percent of GDP between 2010 and 2014, about 23 percentage points above the pre-crisis level. However, this masks large differences between advanced and emerging market G-20 economies. In the former, debt levels are

Table 6. G-20 Countries: Changes in Overall Fiscal Balances
(in percent of GDP; PPP GDP-weighted averages)

	2007	2010	2014	Difference (2014-2007)	Difference (2014-2010)
Overall balance (percent of GDP)					
G-20	-1.1	-6.6	-3.1	-2.0	3.4
Advanced	-1.9	-8.1	-4.4	-2.5	3.7
Emerging markets	0.2	-4.2	-1.2	-1.4	2.9
Output gap (percent deviation from potential)					
G-20	1.7	-3.6	-0.3	-2.0	3.4
Advanced	1.2	-4.6	-0.2	-1.4	4.3
Emerging markets	2.5	-2.2	-0.3	-2.8	1.9
Structural primary balance (percent of GDP)					
G-20	1.0	-2.9	0.5	-0.6	3.3
Advanced	0.4	-3.9	0.0	-0.4	3.9
Emerging markets	2.0	-1.3	1.1	-0.9	2.4
Cyclical primary balance (percent of GDP)					
G-20	0.0	-1.7	-0.5	-0.5	1.2
Advanced	-0.4	-2.4	-0.8	-0.4	1.7
Emerging markets	0.7	-0.6	-0.1	-0.8	0.5
Interest payments (percent of GDP)					
G-20	2.2	2.0	3.1	0.9	1.1
Advanced	1.9	1.8	3.6	1.7	1.8
Emerging markets	2.5	2.3	2.3	-0.2	0.0

Source: Fund staff estimates, based on the July 2009 WEO Update.

Figure 5. G-20 Countries—Outlook for Public Finances
(in percent of GDP)



Source: IMF, *World Economic Outlook,* June update; includes financial support (Japan, United States).

Box 2. Aging and Health Care Spending Pressures in Europe and the United States

Growth in age-related and health-care spending (the latter reflecting in part demographics) is likely to be relatively contained over the next five years, **but will pick up sharply in the following decade**. Based on the European Commission's (EC's) recent Ageing Report, under the assumption of no policy changes (e.g., reflecting only already enacted legislation), pension, health, and long-term care spending in the European Union is expected to grow by about 0.5 percent of GDP over the period up to 2015 (compared to 2007), with the increase accelerating after 2015. These expenditures are projected to rise by 1.9 percent of GDP over 2015–30 and by a further 2.9 percent of GDP between 2030 and 2060. This reflects the timing of the baby boom in Europe, which implies a marked increase in the cohorts reaching retirement age starting in 2020–30. In the short run, net age-related costs may be partially reduced by lower spending on education, as a result of declining fertility and the smaller size of childbearing-age cohorts up to 2030.

These projections are subject to a number of upward risks, in particular with regard to health care spending. A key risk relates to weaker productivity growth in the medium term due to population aging and the effects of the public debt build-up in response to the crisis. Spending pressures on healthcare and long-term care have been conservatively estimated by the EC as they are based on the assumption of unchanged relative prices, contrary to recent trends. Higher relative prices for health services and wider availability of high-tech treatments, as well as greater demand for health care services due in part to the rapidly expanding share of the elderly population, could also escalate health care spending. (In alternative scenarios, the EC estimates additional health care expenditures that could arise from non-demographic factors to range from 2½ to 4½ percent of GDP by 2060). Population aging also could be more rapid, if life expectancy gains are faster (due in part to better health care services). Unemployment may also remain high several years after the crisis, and labor force participation may not increase as expected, leading to lower output growth and higher spending ratios.

However, there is considerable uncertainty regarding the impact of structural factors on future spending trends. For example, technological progress could improve well-being at older ages and foster more active labor participation, ameliorating spending dynamics. Labor supply may also increase in response to lower pensions due to depletion of pension assets during the crisis.

Policy implementation challenges are an additional source of upward risk to these projections. In some countries, existing rules for social security benefits imply a sharp reduction in replacement rates over the medium term. While this may help contain upward pressures on pension expenditure trends, the changes may be politically difficult for governments to enact once benefit levels fall below certain thresholds. Moreover, the changes could trigger increases in other areas of government spending (e.g., social assistance benefits), since a larger number of elderly could qualify for these programs as a result of falling social security incomes.

The specific age-related components in Europe are projected to evolve as follows:

- **Pension expenditure** is expected to expand only by 0.2 percent of GDP by 2015, compared with 2007. However spending is expected to grow rapidly after 2015 and raise by 1.1 percent of GDP over the period until 2030 and a further 1.1 percent of GDP until 2060.
- **Health care spending** is projected to grow by 0.2 percent of GDP overall during the period 2007–15, 0.5 percent of GDP during 2015–30 and 1 percent of GDP during 2030–60.
- **Long-term care spending** is projected to grow by 0.1 percent of GDP over the period until 2015, 0.3 percent of GDP during 2015–30 and 0.8 percent of GDP after 2030.
- **Education spending** is projected to fall by 0.3 percent of GDP by 2015, to stabilize by 2030 (falling by another 0.1 percent of GDP) and grow by 0.2 percent of GDP thereafter. The overall change through 2060 is -0.2 percent of GDP.

In the United States, age-related spending and health-care outlays (beyond demographics) are projected to rise at a faster pace. Based on the most recent U.S. CBO long-term budget projections, which assume no change in current legislation, budget spending for social security plus health care (including the Medicare program, which only in part covers seniors) is expected to grow by 0.5 percent of GDP by 2015, an additional 4.2 percent of GDP between 2015 and 2030, and 5.1 percent of GDP between 2030 and 2060. The bulk of the increase is accounted for by rapidly expanding health care spending for Medicaid and Medicare programs (+3.2 percent of GDP in 2015–30 and +5.2 percent in 2030–60) owing to escalating unit cost growth and increases in the number of beneficiaries. These programs are now under review to contain spending growth while expanding coverage. Social security spending will step up in 2015–30 by 1 percent of GDP but stabilize thereafter (at about 6 percent of GDP) as the baby boom cohorts fully retire.

expected to rise to close to 120 percent of GDP, up from about 80 percent of GDP before the crisis. This owes to persistent primary deficits, the higher interest bill, and weak economic growth.[18] In emerging market G-20 countries, debt levels are expected to decline slightly after the initial post-crisis peak (the first increase in debt since 2002 in these countries). This reflects positive primary balances after 2012 (although smaller than in pre-crisis years), lower interest spending than in advanced G-20 economies, and stronger projected economic growth. Once again, the ultimate costs of the crisis could well be larger, if downside risks materialize.

Market perception of risk

12. **There has been an upward trend in government bond yields in major advanced economies since early this year** (Figure 6). Although bond yields have eased somewhat in the last few weeks and the long end of the yield curve remains below pre-crisis levels (including in countries that have been hit most by the crisis), there had been a noteworthy upward shift in bond yields in most advanced economies. This has reflected primarily a move back to more normal levels of market appetite for risk, as signs emerged that the rate of decline in economic activity was moderating, and financial sector conditions were beginning to stabilize. Also, there appears to have been some pickup in inflationary expectations, reflected in the difference in yields on U.S. government bonds and inflation-indexed securities (TIPS yields). However, the earlier increase and the recent widening of the term premiums (measured by the 2 to 10-year yield spreads) may also reflect, to some extent, large issuances and the impact of moves by credit rating agencies. In summary, given the large and widening output gaps, higher bond yields reflect primarily moves toward normalization of conditions. They may also signal some concern by investors about the size of central bank balance sheets and possible public debt monetization. Going forward, these factors could begin to weigh more on market perceptions of sovereign risk.

13. **CDS spreads (the price of insurance against sovereign default) in advanced economies have also shown an uptick in the last few weeks.** This follows an earlier marked decline from March onwards, which appeared to be associated with a reduction in systemic risk and an improvement in market sentiment, consistent with a historical analysis of the determinants of such spreads. The more recent uptick has taken place even though corporate CDS spreads generally continued declining. It may correspond in part to the recent moves by the ratings agencies and associated concerns about public debt.

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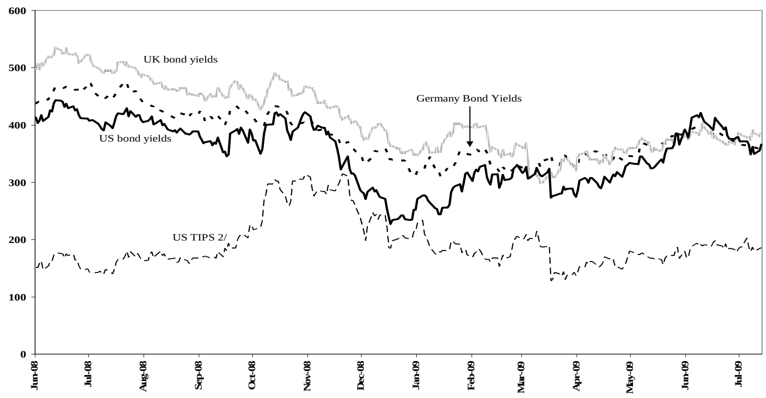
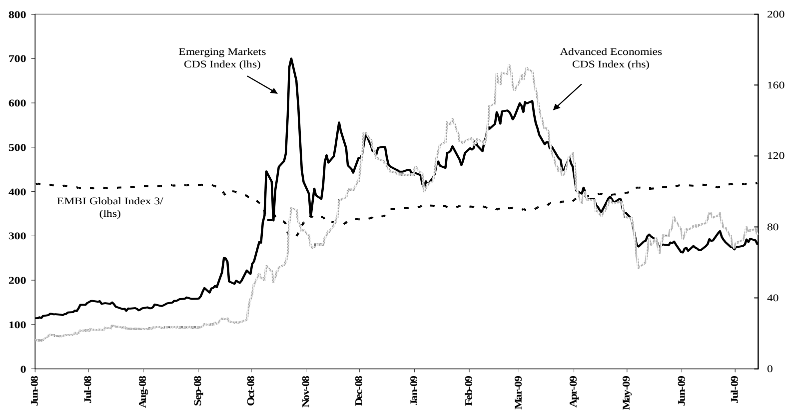
[18] The debt ratios in the smaller (non-G-20) advanced countries increase by 32 percentage points to 81 percent in 2014.

Figure 6. Bond Yields and Sovereign CDS Spreads 1/

Bond Yields and TIPS



Sovereign CDS Spreads and EMBI Index



Sources: DTCC; DataStream; and IMF staff calculations.

1/ Ten-year bond yields for advanced economies. For each group, CDS indexes are averages of 5-year sovereign CDS spreads weighted by net notional amounts outstanding.
2/ U.S. TIPS are 10-year Treasury Inflation Indexed Securities (a proxy for the real interest rate).
3/ The JP Morgan EMBI Global Composite index tracks the total return of actively traded dollar-denominated debt instruments in emerging markets.

14. **The spread of emerging market bonds over U.S. debt also increased in the second quarter of 2009.** The increase, by about 40 basis points, resulted in a return of the EMBI spread to pre-crisis levels of around 400 bp. Following a sharp reduction from the beginning of the second quarter, CDS spreads in emerging economies have also seen an uptick in recent weeks, reflecting in part some concerns about access to market financing as well as developments in advanced countries.[19]

[19] CDS spreads in emerging markets are highly correlated with those in advanced economies: the correlation is about 0.85.

III. Policy Challenges Going Forward

15. **The sharp increase in government debt has complicated the management of preexisting challenges from population aging, especially in advanced economies**. The increase in debt ratios projected for these economies is the largest since World War II. Moreover, governments have taken on large contingent liabilities—guarantees and other commitments to future expenditures—that may materialize. These developments have occurred against the backdrop of looming challenges from population aging: prospective costs from pensions and health care together could amount to more than ten times the costs of the crisis.[20] Fiscal adjustment will therefore be needed in the post-crisis environment, anchored by supporting institutional arrangements.

The scale of fiscal adjustment needed in the medium term

16. **The increase in deficits and debt raises complicated tradeoffs.** Policymakers will need to balance two competing risks: on the one hand, a too hasty withdrawal of fiscal stimulus would risk nipping a recovery in the bud; on the other hand, with a delayed withdrawal investor concerns about sustainability may increase, leading to higher interest rates on government paper, undermining the recovery and increasing risks of a snowballing of debt. At this stage, with recovery not yet underway (and likely to occur at different times in different countries), fiscal adjustment is premature.

17. **Regardless of the timing of adjustment, its necessary scale will be quite large, particularly for high-debt advanced economies.** Preserving investor confidence in government solvency is key to avoiding an increase in interest rates, thereby not only preventing snowballing debt dynamics, but also ensuring that the fiscal stimulus is effective. To halt or reverse the increase in debt-to-GDP ratios, sizable improvements in primary balances will be required in most advanced and several emerging market economies. To illustrate the scale of the task ahead, the necessary primary balance was computed for the following objectives, starting from the projected 2014 debt levels:

- For (i) advanced economies whose debt-to-GDP ratios are projected below 60 percent in 2014 (6 countries), and (ii) emerging market countries whose debt-to-GDP ratios are projected below 40 percent (9 countries): *stabilize the debt-to-GDP ratio from 2014 onward*;[21]

[20] For more discussion, see: http://www.imf.org/external/pubs/ft/spn/2009/spn0913.pdf.

[21] The debt/GDP ratio evolves according to the identity: $\Delta\left(\frac{D}{Y}\right)_t = \left(\frac{r-g}{1+g}\right)\left(\frac{D}{Y}\right)_{t-1} - pb$, where D is the debt stock, Y is GDP, r is the nominal interest rate, g is the nominal growth rate, pb is the primary fiscal balance as a share of GDP, and Δ indicates a change over the previous year. The debt ratio is constant when

$pb = (D/Y)(r-g)/(1+g)$.

- For countries above these thresholds: *beginning in 2014, reduce debt-to-GDP ratios gradually over 15 years to 60 percent by 2029 for the advanced economies (halve the debt for Japan) (16 countries) and to 40 percent for the emerging market economies (10 countries).*

Assuming a difference between the real interest and real growth rates of one percentage point from 2014 onward, attaining these objectives would require, on average (Table 7):

- *For the advanced economies*, an improvement in the primary balance prevailing in 2014 by 5.4 percentage points for the higher-debt group; no improvement would be needed for the lower-debt group.[22]

- *For the emerging market countries*, an improvement in the 2014 primary balance by 0.8 percentage points of GDP for the higher debt economies; no improvement would be needed for the lower-debt group. Despite the limited need for fiscal adjustment from this standpoint, some emerging market countries may nevertheless face refinancing challenges in the current global financial environment.

18. **The necessary effort for each country will depend on its own circumstances, notably its initial debt position.** Estimates for individual countries reveal a wide variation in the need for adjustment (see Appendix Table 5).

19. **Although favorable developments in growth or interest rates would make the needed adjustment less challenging, the task ahead remains serious under most scenarios (Box 3)**. Rapid economic growth has often played an important role in reducing large debt-to-GDP ratios in the past—both through its direct impact on the denominator, and by facilitating adjustment in the primary balance through increased revenues (as long as procyclical spending increases were restrained). Nevertheless, barring a sharp, unexpected increase in inflation, which would reduce the real value of the debt but bring about an associated disruption of its own, fiscal adjustment is likely to be the most important channel through which fiscal sustainability will be ensured in the years ahead.

20. **The requisite fiscal adjustment is made more demanding by pressures in the areas of pensions and health care**. Under current policies, spending on pensions and health care is projected to increase substantially over the next two decades in several countries, especially the advanced economies. Owing to these pressures, which existed prior to the global financial and economic crisis, attaining a given primary surplus presents challenges that were not experienced to the same extent in the past.

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[22] An earlier start would somewhat reduce the need for adjustment. For example, were the adjustment to begin in 2013, the required primary surplus for the high-debt advanced countries would be 4.2 percent of GDP to reach the same targets by 2029.

Table 7. Debt Dynamics and Debt Stabilizing Primary Balances

(in percent of GDP)

	Pre-crisis WEO projections 1/				Current WEO projections 2/				Debt-stabilizing PB or PB needed to bring debt to benchmark level 3/
	Debt		PB		Debt		PB		
	2009	2012	2009	2012	2009	2014	2009	2014	
Advanced economies 4/									
Higher debt 5/	79.4	78.4	0.1	0.5	101.8	121.7	-8.5	-0.9	4.5
Lower debt	24.3	21.3	2.9	2.8	30.0	37.8	-2.8	1.1	0.4
Emerging market economies 6/									
Higher debt 7/	57.8	52.1	1.6	1.5	64.7	60.0	-1.3	1.0	1.8
Lower debt	13.4	10.9	1.3	0.9	18.7	18.6	-3.3	0.9	0.2

Sources: IMF, World Economic Outlook, July 2009 Update; and IMF staff calculations.

1/ IMF, World Economic Outlook, October 2007.
2/ IMF, World Economic Outlook database, July 2009 Update.
3/ Average primary balance needed to stabilize debt at end-2014 level if the respective debt-to-GDP ratio is less than 60 percent for advanced economies or 40 percent for emerging market economies (lower debt economies); or to bring debt ratio to 60 percent (halve for Japan and reduce to 40 percent for emerging market economies) in 2029 (higher debt economies). The analysis is illustrative and makes some simplifying assumptions: in particular, beyond 2014, an interest rate–growth rate differential of 1 percent is assumed, regardless of country-specific circumstances; moreover, the projections are "passive" scenarios based on constant policies.
4/ PPP GDP weighted for each respective group. Advanced higher debt economies: Austria, Belgium, Canada, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, United Kingdom, and the United States. Advanced lower debt economies: Australia, Denmark, Finland, Korea, New Zealand, and Sweden.
5/ Advanced economies are labeled as "higher debt" if the debt/GDP ratio is projected at 60 percent or more in 2014; lower debt otherwise.
6/ PPP GDP weighted for each respective group. Emerging market higher debt economies: Argentina, Brazil, Hungary, India, Malaysia, Mexico, Pakistan, Philippines, Poland, and Turkey. Emerging market lower debt economies: Bulgaria, Chile, China, Indonesia, Nigeria, Russia, Saudi Arabia, South Africa, and Ukraine.
7/ Emerging market economies are labeled as "higher debt" if the debt/GDP ratio is projected at 40 percent or more in 2014; lower debt otherwise.

Fiscal adjustment strategy and supporting institutional features—a status update

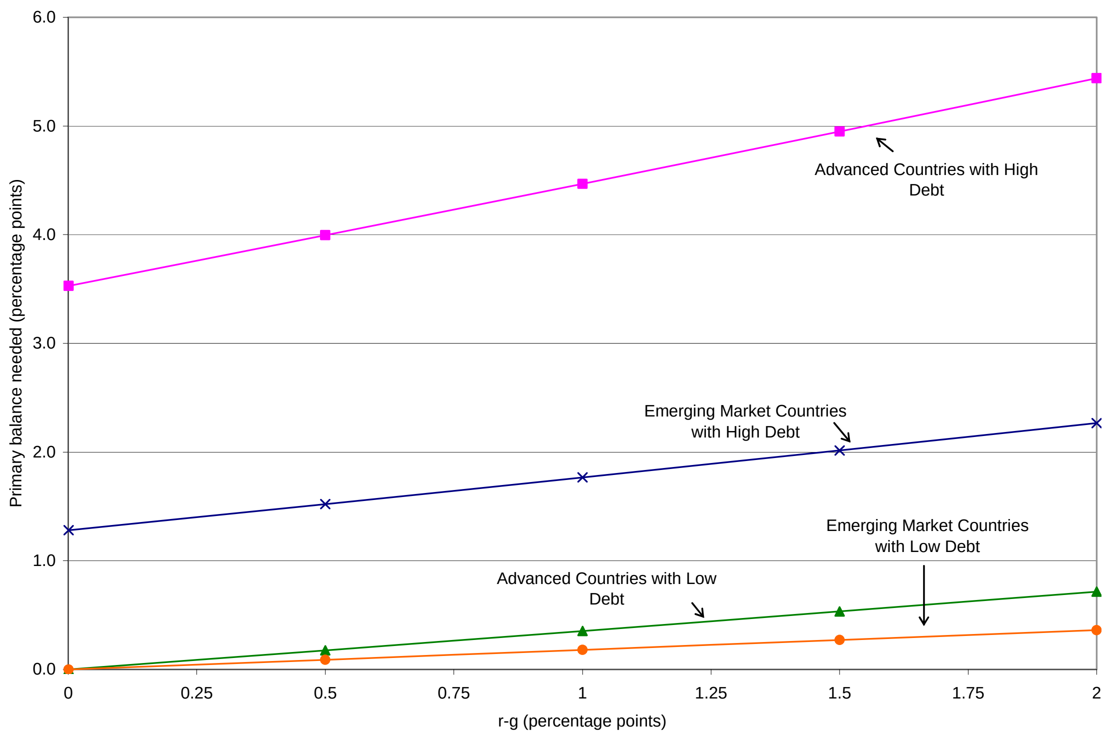
21. **Successful fiscal adjustment to ensure that debt returns to sustainable positions will hinge on measures to contain aging-related spending, for countries with looming demographic pressures.** Entitlement reforms in the areas of pensions and health care will play a key role in two respects. First, such reforms are necessary to improve the primary balance, thereby helping to reduce the debt-to-GDP ratio. Second, the extent to which the projected debt-to-GDP ratio is viewed as sustainable depends in part on the outlook for pensions and health care systems over the longer run. Thus, reforms that improve the long-run outlook would, other things equal, permit a somewhat less ambitious reduction in the debt-to-GDP ratio over the coming years.

22. **Going forward, a strategy to ensure fiscal solvency should thus be based on**: (i) a firm commitment and a clear strategy to contain aging-related spending, especially in

Box 3. Primary Balance Adjustment Needed and Interest-Growth Differential

Under the assumption of an interest-growth differential of one percentage point, the higher-debt advanced economies would need to attain a primary surplus of 4½ percent of GDP from 2014 onward to achieve the gradual debt-reduction objectives described earlier. (The relevant interest rate is the average cost of borrowing for the government—for most advanced economies, usually proxied by yields on medium- to long-term government bonds.) With a zero differential, the required surplus would amount to 3½ percent of GDP—still a serious challenge. With a differential amounting to two percentage points, a surplus as high as 5½ percent of GDP would be needed. The impact of the differential on the need for adjustment is greater (in percentage points of GDP) the higher the debt-to-GDP ratio, and is thus most pronounced for the advanced countries with relatively high debt (see chart below).

Primary Balance Needed and Interest-Growth Differential



An interest-growth differential in the range of 0–1 percentage points in 2014–29 would not be unusual by historical standards. A 2-percentage point differential would be more pessimistic, but still plausible, taking into account the higher debt levels and a possible decline in potential growth in the years ahead. Although projections for the interest-growth differential beyond 2014 are not available, current WEO assumptions for the largest advanced economies for 2014 envisage that the differential would be at—or slightly below—zero using short-term interest rates; longer-term rates have historically yielded about one percentage point in excess of short-term rates. The average (long-term) interest-growth differential in the main advanced countries rarely exceeded 2 percentage points in 15-year periods during the past one and a half centuries, whereas negative differentials were experienced during the oil price shocks of the 1970s (Catao and Mackenzie, 2006).

advanced economies;[23] (ii) growth-enhancing structural reforms; and (iii) fiscal policies cast within medium-term fiscal frameworks (and supportive institutional arrangements) that envisage a gradual fiscal correction once economic conditions improve.[24] The remainder of this section focuses on this last point, where some initial action has occurred.

23. **Several institutional features are likely to play an important role in anchoring fiscal adjustment**. These include a formal commitment to medium-term fiscal consolidation, with appropriate flexibility in the event of output shocks; and procedures for identifying and disclosing the public sector's overall fiscal position, including items that may not yet appear in "headline" deficits or debts, but represent contingent obligations.

24. **There is growing interest in medium-term fiscal frameworks and their potential role in recovering from high debt positions**.[25] Medium-term fiscal targets can help provide a clear indication of what country authorities perceive as a desirable fiscal policy path. Such targets can help anchor market expectations if they are credibly set and buttressed by appropriate institutional frameworks (for example, medium-term expenditure frameworks that set multi-year limits at the aggregate, ministerial, or program level, in order to translate overall objectives into budget decisions). During the crisis, countries with existing fiscal rules have, for the most part, retained them—in some cases making use of escape clauses—although the crisis has tested their resilience and highlighted the importance of built-in flexibility to avoid tightening during recessions.

25. **Few G-20 countries have so far developed fully fledged medium-term fiscal adjustment strategies, although some have announced medium-term targets or have extended the horizon of their fiscal projections.** Recent developments include:

- In June, the parliament in *Germany* adopted a new constitutional fiscal rule for both federal and state governments that envisages a gradual move to structural balance from 2011. The rule requires the federal government's structural deficit (the deficit adjusted for the effects of the cycle and one-off operations) not to exceed 0.35 percent of GDP from 2016. States are required to run structurally balanced budgets from 2020.

- In *Japan*, the authorities aim to halve the primary deficit (excluding the social security fund) within five years and to achieve primary balance within ten years. The authorities have also committed to stabilizing the debt-to-GDP ratio by the middle of the next decade and placing it on a downward path during the early 2020s.

[23] An early start to entitlement reform would not necessarily undermine the fiscal stimulus. For example, an increase in the retirement age would yield savings for the government without reducing aggregate demand.

[24] To this end, the task will be easier if fiscal stimulus packages consist of reversible measures.

[25] A forthcoming IMF study will address the pros and cons of fiscal rules in the post-crisis context.

- The *United Kingdom* projects an annual average fiscal consolidation of 1⅓ percentage points of GDP from 2010 to 2014, so that debt begins to decline by 2015–16.

- The U.S. authorities have published ten-year fiscal forecasts—a welcome step, though underlying projections for growth and interest rates appear optimistic. The authorities have also presented to Congress legislation that would reintroduce statutory pay-as-you-go provisions for new programs (requiring offsetting revenue increases or expenditure cuts for any new program introduced.)

26. **However, medium-term consolidation policies have yet to be articulated**. Where they have been mooted, measures have focused on increases in taxation of fuel and on making income taxes more progressive, and in some cases on limiting growth of current spending or cutting capital expenditure. Table 8 provides an overview of preliminary strategies to ensure fiscal sustainability and measures across the G-20 countries. A revival of tax revenues and a reversal of discretionary spending initiatives may also be expected when conditions improve, although some of the revenue base (e.g., from elevated profits in the financial sector or real estate) may have been lost permanently. Also, gains from "unwinding" fiscal and financial support operations are uncertain, and in some countries significant political capital will need to be expended to ensure that stimulus measures do not become permanent. In any case, a recovery of cyclical revenues and not renewing the fiscal stimulus will reduce deficits, but will be insufficient to reverse the recent increases in public debt. Going forward, medium-term fiscal adjustment strategies—including entitlement reform—have greater potential to reassure market participants and the public at large.

27. **Preserving fiscal solvency requires accurate information on the public sector's overall position and appropriate management of assets (and associated liabilities) acquired as a result of recent measures in support of the financial system**.[26] While the impact of such measures on deficits has thus far been limited, the impact on sovereign balance sheets has been far more pronounced, as a result of liquidity provision, lending operations, and recapitalization and asset purchase operations.[27] Although these measures have not directly affected the public sector's net worth, they have led to increases in government equity holdings. Moreover, central banks and other public sector entities have increased their claims on financial institutions. Government contingent liabilities have also risen, largely through extension of guarantees. These developments have heightened the

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[26] A forthcoming IMF study will address issues related to managing acquired assets and liabilities in the context of exit strategies.

[27] The limited impact on deficits may be due to insufficient recognition in the budget of the subsidy component (as would be appropriate under the IMF's *Government Finance Statistics Manual 2001*). Where governments have attempted to include expected losses in the budget (e.g., the United States) the impact has been significant.

importance of preparing a sovereign balance sheet, but also the challenges this would involve, owing to the increasingly blurred boundaries between the public and private sectors.

28. **A further element in assessing the state of the public finances relates to the risks they face—the importance of which has been illustrated by the recent crisis.**[28] Over the past few years, several countries have begun issuing annual Statements of Fiscal Risks (from macroeconomic shocks, natural disasters, and contingent liabilities), thereby strengthening support for prudent fiscal policy, facilitating risk management, and reducing borrowing costs. Going forward, such statements—which are likely to deepen their treatment of fiscal risks from uncertain economic growth and government intervention operations in support of the financial system—may help inform the exit strategy from large public debts.

[28] For more discussion, see http://www.imf.org/external/pubs/ft/spn/2009/spn0918.pdf.

Table 8. Preliminary Strategies to Ensure Fiscal Sustainability in G-20 Countries

	Target	**Measures 1/**
Argentina		Nonrenewal of stimulus.
Australia	Medium-term strategy includes target of running surpluses on average over the cycle. Return to surplus projected by 2015–16. 2/	Nonrenewal of stimulous. With improvement in conditions, hold real growth in spending to 2 percent per annum until the budget returns to surplus.
Brazil	3-year budget projection, with primary surplus targets that imply declining debt ratio.	Nonrenewal of stimulus and improved tax compliance.
Canada	Debt targets to be recalibrated once economic uncertainties dissipate. Authorities project a return to surplus in 2013/14 and long-term structural balance. Over the medium-term, spending should return to its 2007–08 share of GDP.	Nonrenewal of stimulus.
China		Nonrenewal of stimulus.
France		Nonrenewal of stimulus; spending restraint once recovery underway. Consolidation measures initiated prior to crisis (civil service reductions, containment of expenditures, restrictions on tax loopholes).
Germany	Constitutional fiscal rule for federal and state levels—ceiling of structural deficit of 0.35 percent of GDP for FG from 2015 and structural balance for states from 2020.	Nonrenewal of stimulus; spending restraint once recovery underway.
India		Nonrenewal of stimulus.
Indonesia	Debt reduction (e.g., to below 30 percent of GDP). Fiscal rule—3 percent deficit and 60 percent debt.	Nonrenewal of stimulus.
Italy	Consolidation over the medium-term towards the Medium-term Objective	Budget system and public administration reforms, enhanced tax compliance, and fiscal federalism.
Japan	Halve the primary deficit (excl. the social security fund) within five years and achieve primary balance within ten. Stabilize debt ratio by the mid 2010s and place it on downward path during the early 2020s.	Nonrenewal of stimulus; higher consumption taxes and savings on health care and public administration spending.
Korea	Balanced budget (excluding social security fund) over the medium term.	Nonrenewal of stimulus and other nonidentified measures.
Mexico	Annual balanced budget rule.	Nonrenewal of stimulus; revenue administration reforms.
Russia	Four-year reduction of the overall fiscal and non-oil balances.	Nonrenewal of stimulus.
Saudi Arabia		
South Africa	Gradual reduction of the budget deficit from FY 2010/11 onward.	Moderation of expenditure growth trends.
Turkey	Stabilize the debt-to-GDP ratio by 2011	Nonrenewal of stimulus, improved expenditure control, local government reform, introduction of fiscal rule and continuation of tax administration reforms.
United Kingdom	An annual average fiscal consolidation of 1⅓ percent of GDP from 2010 to 2014, projected to result in falling debt by 2015–16. 2/	Nonrenewal of stimulus; increases in the marginal income tax of high-income earners, restrictions of tax allowances for high income households, fuel duty increases; efficiency savings; cuts in public sector investment.
United States	Stabilization of debt ratio through 2019. 2/	Nonrenewal of most stimulus; proposed reintroduction of statutory PAYGO rules.

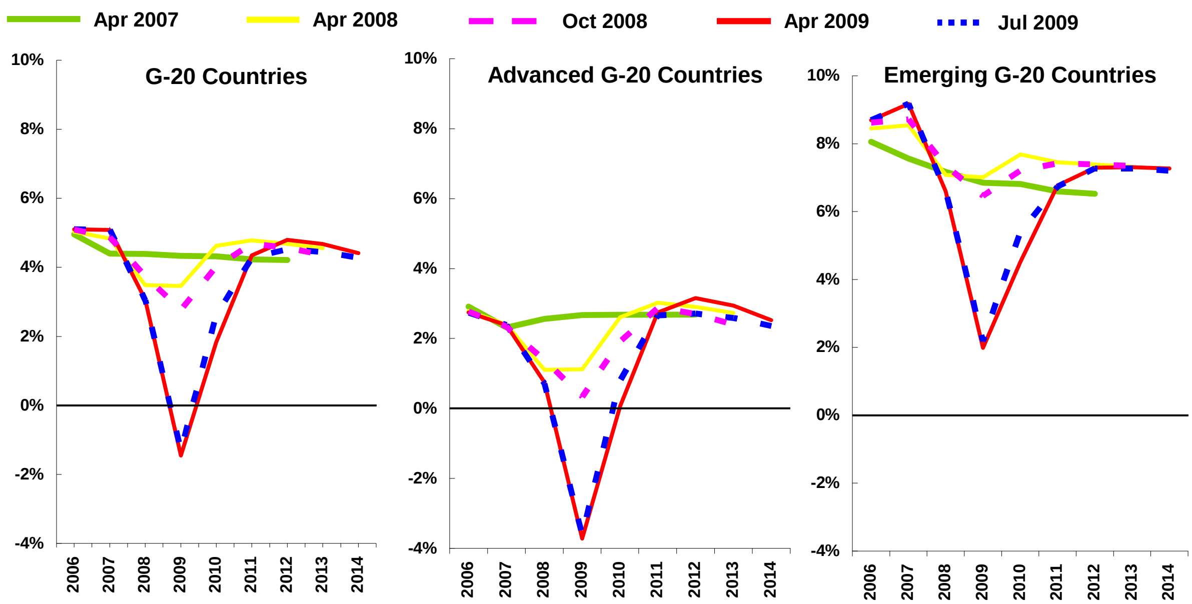
Source: Survey of Fund G-20 desks.

1/ Views of staff of the intentions of G-20 country authorities, based on discussions and announcements and in addition to functioning of automatic stabilizers (recovery of revenues).
2/ Note that this is a projection, rather than a target.

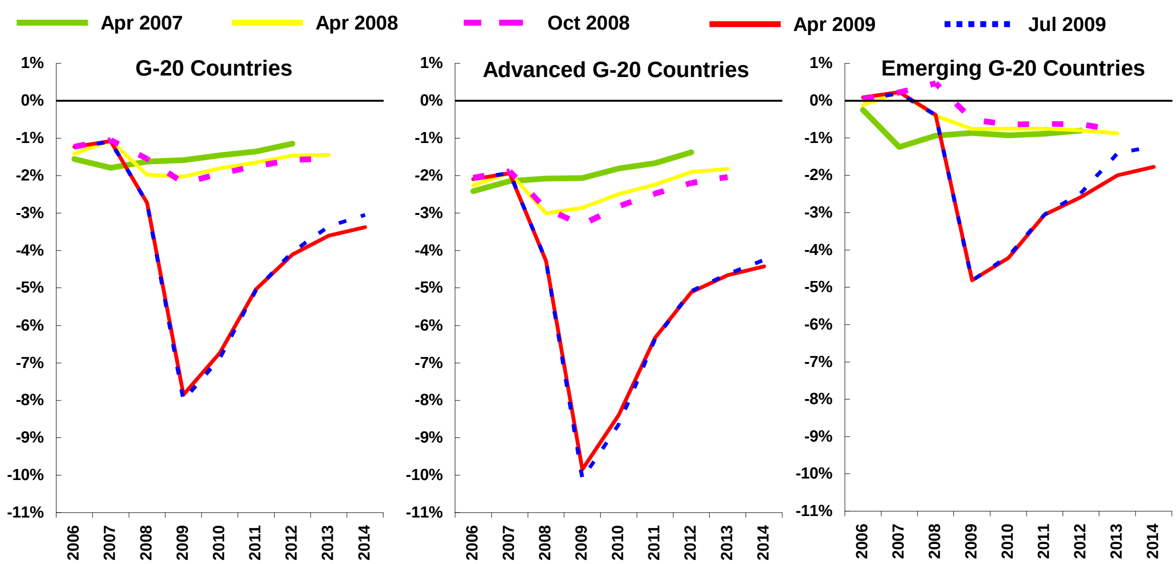
Appendix Figure 1. G-20 Countries: Staff Estimates of Growth and Fiscal Balances, 2006–14

(in percent and in percent of GDP)

Real GDP Growth



General Government Balances



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

Appendix Table 1. G-20 Countries: Fiscal Balances and General Government Debt 1/ 2/
(in percent of GDP)

Overall Fiscal Balance

Country	2007 (Pre-crisis)	2009	2010	2014
Argentina	-2.2	-3.3	-1.5	-0.4
Australia	1.5	-4.3	-5.3	-1.3
Brazil	-2.5	-3.2	-1.3	-1.3
Canada	1.6	-4.2	-3.7	0.5
China	0.9	-4.3	-4.3	-1.0
France	-2.7	-7.4	-7.5	-5.2
Germany	-0.5	-4.6	-5.4	-0.5
India	-5.2	-9.8	-8.4	-4.6
Indonesia	-1.2	-2.6	-2.1	-1.7
Italy	-1.5	-5.9	-6.3	-4.8
Japan 3/	-2.5	-10.3	-10.3	-7.6
Korea	3.5	-3.2	-4.3	2.1
Mexico	-1.4	-3.9	-4.0	-2.9
Russia	6.8	-5.5	-5.0	2.0
Saudi Arabia	15.7	4.2	8.8	13.4
South Africa	1.2	-2.8	-3.0	-2.3
Turkey 4/	-2.1	-5.8	-5.4	-5.0
United Kingdom	-2.6	-11.6	-13.3	-6.9
United States 5/	-2.9	-13.5	-9.7	-4.7
G-20	-1.1	-8.1	-6.9	-3.1
Advanced G-20 Countries	-1.9	-10.2	-8.7	-4.3
Emerging Market G-20 Countries	0.2	-4.9	-4.2	-1.2

General Government Debt (Gross)

Country	2007 (Pre-crisis)	2009	2010	2014
Argentina	67.9	50.4	50.6	48.4
Australia	8.5	13.7	19.1	25.9
Brazil	67.7	70.1	68.5	62.2
Canada	64.2	75.6	76.6	65.4
China	20.2	20.9	23.4	21.3
France	63.8	77.4	83.8	95.5
Germany	63.6	79.8	86.8	91.4
India	80.5	83.7	85.0	73.4
Indonesia	35.1	31.1	31.0	28.4
Italy	103.5	117.3	123.2	132.2
Japan	187.7	217.4	226.2	239.2
Korea	29.6	35.8	42.0	39.4
Mexico	38.2	49.2	50.3	44.5
Russia	7.4	7.3	7.8	7.3
Saudi Arabia	18.5	14.6	12.6	9.4
South Africa	28.5	29.0	30.5	29.5
Turkey 4/	39.4	46.9	50.7	58.1
United Kingdom	44.1	68.6	82.2	99.7
United States	63.1	88.8	99.8	112.0
G-20	62.4	76.1	82.1	86.6
Advanced G-20 Countries	78.8	100.6	109.7	119.7
Emerging Market G-20 Countries	37.5	38.8	40.2	36.4

Source: IMF, World Economic Outlook, July 2009 Update.

1/ Data are on calendar-year basis for the general government if available (otherwise central government). Debt is on gross basis for general government, except for Argentina and Korea (central government).
2/ Averages are based on 2008 PPP GDP weights.
3/ Includes financial sector-related measures of 0.5 percent of GDP in 2009, and 0.2 percent of GDP in 2010. These measures cover both subsidies to and capital injections in public financial institutions.
4/ Fiscal projections reflect staff's estimates, based on the authorities' policy intentions as stated in the EU Pre-Accession Program document. They do not include measures taken by the government in July 2009 to improve the fiscal position.
5/ Includes financial sector support (5 percent of GDP in 2009 and 1.2 percent of GDP in 2010).

Appendix Table 2. G-20 Countries: Fiscal Expansion

(in percent of GDP, change with respect to pre-crisis year 2007)

	2009			2010			Fiscal Expansion Change from April WEO	
		of which:			of which:			
	Overall Balance	Crisis-Related Discretionary Measures 1/	Other Factors 2/	Overall Balance	Crisis- Related Discretionary Measures 1/	Other Factors 2/	2009	2010
Argentina 3/	-1.1	-1.5	0.4	0.7	0.0	0.7	0.2	1.5
Australia	-5.8	-2.9	-2.9	-6.8	-2.0	-4.7	-1.8	-1.6
Brazil	-0.7	-0.6	0.0	1.2	-0.6	1.8	-1.0	-0.2
Canada	-5.7	-1.9	-3.8	-5.2	-1.7	-3.6	-1.0	-0.2
China	-5.2	-3.1	-2.1	-5.2	-2.7	-2.5	-0.7	-0.7
France	-4.7	-0.7	-4.0	-4.8	-0.8	-4.0	-1.1	-1.0
Germany	-4.1	-1.6	-2.5	-4.9	-2.0	-2.9	0.1	0.7
India 4/	-4.7	-0.6	-4.1	-3.3	-0.6	-2.7	0.3	0.3
Indonesia	-1.4	-1.4	-0.1	-0.9	-0.6	-0.2	-0.1	0.1
Italy	-4.4	-0.2	-4.2	-4.8	-0.1	-4.7	-0.6	-0.4
Japan 5/	-7.3	-2.4	-4.9	-7.5	-1.8	-5.7	-0.4	-0.4
Korea	-6.7	-3.6	-3.0	-7.8	-4.7	-3.1	0.0	0.4
Mexico	-2.5	-1.5	-1.0	-2.6	-1.0	-1.6	-0.3	-0.3
Russia	-12.2	-4.1	-8.2	-11.7	-1.3	-10.4	0.7	0.0
Saudi Arabia	-11.6	-3.3	-8.3	-7.0	-3.5	-3.5	8.1	10.2
South Africa 6/	-4.0	-3.0	-1.0	-4.2	-2.1	-2.1	0.2	0.1
Turkey 7/	-3.7	-0.8	-2.9	-3.3	-0.3	-3.0	0.1	-0.3
United Kingdom	-8.9	-1.6	-7.4	-10.6	0.0	-10.7	-1.7	-2.4
United States 8/	-5.6	-2.0	-3.6	-5.6	-1.8	-3.9	0.6	0.2
PPP GDP-weighted average	-5.5	-2.0	-3.5	-5.5	-1.6	-3.8	0.0	-0.1
Advanced countries	-5.9	-1.9	-4.0	-6.2	-1.6	-4.5	-0.1	-0.2
Emerging and Developing G-20	-5.0	-2.2	-2.8	-4.4	-1.6	-2.8	0.0	0.1
United States 9/	-10.6	-2.0	-8.6	-6.8	-1.8	-5.1	0.1	-0.1
Japan 9/	-7.8	-2.4	-5.4	-7.7	-1.8	-6.0	-0.4	-0.4
PPP-weighted average, incl. financial sector support	-7.0	-2.0	-4.9	-5.8	-1.6	-4.2	-0.2	-0.2

Source: Staff estimates based on the July 2009 WEO Update. For a discussion of estimation approaches, see http://www.imf.org/external/np/pp/eng/2009/030609a.pdf.

1/ Figures reflect the budgetary cost of crisis-related discretionary measures in each year compared to 2007 (baseline), based on measures announced through mid-July. They do not include (i) acquisition of assets (including financial sector support) or (ii) measures that were planned before the crisis.
2/ Includes estimates of the impact of automatic stabilizers, plus noncrisis discretionary spending or revenue measures and the impact of nondiscretionary effects on revenues beyond the normal cycle (e.g., the revenue impact of the extraordinary decline in commodity and real estate prices and financial sector profits). A positive amount reflects factors limiting the size of permissible deficits (e.g., assumed compliance with fiscal rules).
3/ Based on staff's analysis.
4/ Discretionary measures on fiscal-year basis. Includes only on-budget measures. Additional off-budget measures amount to 0.8 percent of GDP in 2008/09 and 1.6 percent of GDP in 2009/10 (including 0.4 percent of GDP for bank recapitalization). 5/ Based on staff preliminary analysis, financial sector-related measures of 0.5 percent of GDP in 2009, and 0.2 percent of GDP in 2010 are excluded, so as to focus on the fiscal measures with direct effect on demand. These measures cover both subsidies to and capital injections in public financial institutions.
6/ Fiscal-year basis. Based on staff estimates of the cyclically-adjusted general government balance. Additional stimulus in the form of infrastructure investment is being provided by the broader public sector, so that the total fiscal stimulus (as measured by the public sector borrowing requirement) is 4.2 percent of GDP in 2008, 6.2 percent in 2009, and 4.9 percent in 2010.
7/ Changes in the overall fiscal balance reflect staff's estimates, given the Turkish authorities' policy intentions, as stated in the EU Pre-Accession Program document. Includes only discretionary measures taken from September 2008 through March 2009. A further stimulus package, announced in early June, consists of investment incentives, short-term public sector employment, and credit guarantees. Official government estimates of the June package are not yet available.
8/ Excludes losses from financial system support measures (estimated at 5 percent of GDP in 2009 and 1.2 percent of GDP in 2010), so as to focus on the fiscal measures with direct effect on demand.
9/ Includes cost of financial system support measures.

Appendix Table 3. Support for Financial and Other Sectors and Upfront Financing Need

(As of June 2009; in percent of 2008 GDP; average using PPP GDP weights) 1/

	Capital Injection	Purchase of Assets and Lending by Treasury 2/	Guarantees 3/	Liquidity Provision and Other Support by Central Bank	**Upfront Government Financing 4/**
	(A)	(B)	(C)	(D)	(E)
Advanced North America					
Canada	0.0	10.9	13.5	1.5	**10.9**
United States 5/	5.2	1.3	10.9	8.4	**6.7**
Advanced Europe					
Austria	5.3	0.0	30.1	…	**8.9**
Belgium	4.8	0.0	26.4	…	**4.8**
France 6/	1.4	1.3	16.4	…	**1.6**
Germany	3.8	0.4	18.0	…	**3.7**
Greece	2.1	3.3	6.2	…	**5.4**
Ireland	5.9	0.0	198.1	…	**5.9**
Italy 7/	0.7	0.0	0.0	…	**0.7**
Netherlands	3.4	10.3	33.6	…	**13.6**
Norway 8/	2.0	15.8	0.0	14.7	**15.8**
Portugal 9/	2.4	0.0	12.0	…	**2.4**
Spain 10/	0.0	3.9	18.3	…	**3.9**
Sweden 11/	2.1	4.8	47.5	13.6	**5.2**
Switzerland	1.1	0.0	0.0	25.5	**1.1**
United Kingdom 12/	3.9	13.8	49.7	14.4	**20.0**
European Central Bank	…	…	…	6.4	**…**
Advanced Asia and Pacific					
Australia	0.0	0.7	8.8	…	**0.7**
Japan 13/	2.4	21.2	7.3	2.9	**0.8**
Korea 14/	2.3	5.5	14.5	4.5	**0.8**
Emerging Economies					
Argentina 15/	0.0	0.9	0.0	4.2	**0.9**
Brazil 16/	0.0	0.8	0.0	12.5	**0.0**
China	0.0	0.0	0.0	21.3	**0.0**
India	0.4	0.0	0.0	9.2	**0.4**
Indonesia 17/	0.0	0.0	0.1	1.3	**0.1**
Hungary 18/	1.1	2.4	1.1	15.7	**3.5**
Poland	0.0	0.0	3.2	5.5	**0.0**
Russia	1.2	1.2	0.5	14.3	**2.3**
Saudi Arabia 19/	0.0	1.2	N/A	33.1	**1.2**
Turkey 20/	0.0	0.3	0.0	3.1	**0.0**
Average					
G-20	2.2	3.5	8.8	9.3	**3.6**
Advanced Economies	3.4	5.3	14.0	6.9	**5.5**
In billions of US$	1,149	1,937	4,646	2,514	**1,849**
Emerging Economies	0.2	0.3	0.1	13.6	**0.4**
In billions of US$	22	38	7	1,605	**47**

Sources: FAD-MCM database; IMF staff estimates based on announcements by official agencies.

1/Columns A, B, C, and E indicate *announced or pledged amounts, and not actual uptake*. Column D indicates the *actual changes in central bank balance sheets from June 2007 to April 2009*. While these changes are mostly related to measures aimed at enhancing market liquidity and providing financial sector support, they may occasionally have other causes, and also may not capture other types of support, including that due to changes in regulatory policies. For the Euro zone countries, see the ECB row. Averages for column D include the Euro zone as a whole.
2/ Column B does not include treasury funds provided in support of central bank operations. These amount to 0.5 percent of GDP in the United States, and 12.8 percent in the United Kingdom.
3/ Excludes deposit insurance provided by deposit insurance agencies.
4/ Includes gross support measures that require upfront government outlays (i.e., excludes recovery from the sale of acquired assets).
5/ Estimated upfront financing need for 2009–10 is US$960 bn (6.7% of GDP), consisting of the allocated amount under TARP (US$510 bn); Treasury purchases of GSE preferred stocks (US$400 bn); and treasury support for Commercial Paper Funding Facility (US$50 bn).
6/ Support to the country's strategic companies is recorded under (B); of which €20 bn will be financed by a state-owned bank, *Caisse des Depôts et Consignations*, not requiring upfront treasury financing.
7/ Does not include the temporary swap of government securities for assets held by Italian banks undertaken by the Bank of Italy.
8/ Excluding asset accumulation in Sovereign Wealth Funds, the balance sheet expansion during the period was only 4.5 percent of GDP.
9/ A maximum amount of €20 bn (12% of GDP) is allocated to both guarantees and capital injection, with the latter not exceeding €4 bn.
10/ Column C includes approved bank debt guarantees up to €100 bn, and another €100 bn that would be extended, if needed.
11/ Some capital injection (SEK50 billion) will be undertaken by the Stabilization Fund.
12/ Estimated upfront financing need is £289 bn (20 percent of GDP), consisting of Bank Recapitalization Fund (£56 bn), Special Liquidity Scheme (£185 bn) and financing for the nationalization of Northern Rock and Bradford & Bingley (£48 bn).
13/ Budget provides JPY 3,900 bn (0.8 percent of GDP) to support capital injection by a special corporation and lending and purchase of commercial paper by policy-based financing institutions.
14/ In 2009, KRW 8 trillion will be provided from the budget to support for SMEs.
15/ Staff estimates.
16/ Liquidity support and loan purchases are provided through public banks and deposit insurance fund, entailing no upfront financing.
17/ Small interventions have been recently implemented through the deposit insurance agency that are not yet quantified.
18/ The expansion of the central bank balance sheet reflects mostly the increase in Net Foreign Assets as a result of IMF and EU disbursements in the context of the SBA-supported program. During this period, the increase in central bank domestic assets was limited to 2.3 percent of GDP.
19/ A significant part of the central bank balance sheet expansion is due to a large accumulation of foreign assets during 2008.
20/ Column B shows loans by the SME Industry Development Organization, not requiring direct treasury financing.

Appendix Table 4. Financial Sector Support Utilized Relative to Announcement

(In percent of 2008 GDP, unless otherwise indicated) 1/

	Capital Injection		Purchase of Assets and Lending by Treasury	
Countries	Amount used	In percent of announcement	Amount used	In percent of announcement
Advanced North America				
Canada	…	…	5.6	51.6
United States	2.2	41.9	0.7	53.8
Advanced Europe				
Austria	1.7	32.7	…	…
Belgium	4.7	97.6	…	…
France	0.8	57.0	0.4	26.5
Greece	1.7	82.0	1.8	55.0
Ireland	3.8	63.6	…	…
Italy	0.0	0.0	…	…
Netherlands	2.3	68.8	10.2	99.4
Norway	0.0	0.0	4.8	30.3
Portugal	…	…	…	…
Spain	…	…	1.8	44.6
Switzerland	1.1	100.0	…	…
United Kingdom	3.9	100.0	3.4	24.4
Advanced Asia and Pacific				
Australia	…	…	0.5	71.3
Japan	0.0	1.0	0.8	3.6
Korea	0.8	33.0	0.3	4.8
Emerging Economies				
Brazil	…	…	0.3	43.5
India	0.0	5.0	0.0	….
Indonesia	…	…	…	…
Hungary	0.1	9.3	2.1	87.0
Russia	0.5	40.6	0.4	31.0
Saudi Arabia	…	…	0.6	51.4
Average 2/				
G-20	1.1	41.8	0.9	18.9
Advanced Economies	1.4	42.3	1.1	18.4
In billions of US$	425	…	333	…
Emerging Economies	0.1	29.6	0.2	37.8
In billions of US$	7	…	13	…

Source: Staff estimates.

1/ Based on the latest information available.
2/ PPP weighted averages for the countries listed above.

Appendix Table 5. Debt and Primary Balance
(in percent of GDP)

	Pre-crisis WEO projections 1/				Current WEO projections				Debt-stabilizing PB or PB needed to bring debt to benchmark level (shaded) 2/
	Debt		PB		Debt		PB		
	2009	2012	2009	2012	2009	2014	2009	2014	
Advanced countries									
Australia	7.8	6.0	0.9	0.6	13.7	25.9	-4.3	-0.4	0.3
Austria	56.8	51.5	2.2	2.0	70.0	83.7	-1.5	-1.2	2.3
Belgium	79.2	71.2	3.7	3.5	98.1	111.1	-0.5	-1.3	4.3
Canada	61.0	51.3	1.2	0.5	75.6	65.4	-3.5	-0.4	1.0
Denmark	16.1	6.6	3.5	2.3	26.1	30.0	-2.2	-0.7	0.3
Finland	29.6	26.8	3.2	1.8	40.6	54.4	-2.5	-3.0	0.5
France	63.0	60.5	-0.3	0.8	77.4	95.5	-5.3	-2.1	3.1
Germany	61.1	59.4	2.1	2.0	79.8	91.4	-2.3	1.9	2.8
Greece 3/	75.0	70.1	1.5	1.7	108.8	133.7	-1.5	-3.1	5.9
Iceland	28.8	27.4	-1.6	-0.6	139.9	134.1	-7.7	7.6	5.9
Ireland	23.6	23.2	0.5	0.4	59.9	82.2	-10.3	1.6	2.2
Italy	104.1	102.0	2.5	2.6	117.3	132.2	-0.9	0.5	5.8
Japan	194.2	189.6	-1.8	-0.2	217.4	239.2	-9.0	-5.1	9.8
Korea	32.6	31.8	4.3	4.3	35.8	39.4	-1.6	3.8	0.4
Netherlands	42.4	33.1	2.8	2.9	66.2	80.9	-3.1	0.2	2.1
New Zealand 4/	20.8	20.7	2.3	2.1	23.4	53.9	-2.1	-4.6	0.5
Norway	43.8	43.8	13.0	9.6	67.2	67.2	4.9	8.4	1.1
Portugal	63.6	57.0	1.3	2.1	73.3	87.5	-3.3	0.8	2.6
Spain	32.4	29.7	1.6	1.5	54.7	81.2	-8.5	-4.0	2.1
Sweden	33.6	21.1	2.1	2.7	43.5	49.4	-4.8	-0.6	0.5
United Kingdom	42.9	42.5	-0.5	0.2	68.6	99.7	-10.0	-3.8	3.4
United States	63.4	65.8	-0.8	-0.3	88.8	112.0	-12.3	0.3	4.3
PPP-weighted average	74.8	73.6	0.3	0.7	95.8	114.7	-8.0	-0.7	4.2
G-20	79.5	78.9	-0.1	0.5	100.6	119.7	-8.6	-0.6	4.5
High debt	79.4	78.4	0.1	0.5	101.8	121.7	-8.5	-0.9	4.5
Low debt	24.3	21.3	2.9	2.8	30.0	37.8	-2.8	1.1	0.4
Emerging market economies									
Argentina	51.0	39.6	2.8	2.4	50.4	48.4	0.5	2.2	1.0
Brazil	67.7	62.7	3.4	3.4	70.1	62.2	1.5	3.3	2.0
Bulgaria	20.8	15.6	3.1	1.1	20.4	17.6	0.2	0.3	0.2
Chile	3.8	2.8	4.4	3.1	5.1	2.9	-3.6	1.3	0.0
China	13.4	11.2	-0.4	-0.6	20.9	21.3	-3.8	-0.4	0.2
Hungary	66.0	65.6	0.3	0.2	77.4	66.9	1.0	3.9	2.3
India	69.8	61.6	0.2	0.5	83.7	73.4	-4.1	0.7	2.8
Indonesia	32.8	27.7	0.1	0.6	31.1	28.4	-0.6	0.2	0.3
Malaysia	40.7	35.8	-1.1	-1.6	39.0	50.0	-3.3	-5.2	1.1
Mexico	40.9	41.3	0.9	0.2	49.2	44.5	-1.1	-0.4	0.7
Nigeria	11.1	8.9	8.1	4.2	13.5	9.6	-6.8	3.0	0.1
Pakistan	48.9	43.2	0.7	0.5	55.2	55.1	0.7	0.1	1.5
Philippines	46.1	42.7	2.2	1.9	52.1	45.1	1.2	3.1	0.7
Poland	45.6	44.6	-0.7	-0.2	50.5	50.2	-1.9	0.5	1.1
Russia	3.9	2.3	1.7	1.5	7.3	7.3	-4.9	2.4	0.1
Saudi Arabia	14.8	11.4	19.2	16.8	14.6	9.4	4.6	14.0	0.1
South Africa	24.0	18.1	2.5	1.9	29.0	29.5	-0.5	0.0	0.3
Turkey 3/	48.7	37.3	6.3	6.3	46.9	58.1	-0.2	1.1	1.7
Ukraine	13.5	12.1	-1.7	-1.6	16.5	24.2	-4.4	-0.1	0.2
PPP-weighted average	32.9	29.0	1.4	1.2	38.9	36.8	-2.4	1.0	0.9
G-20	32.5	28.4	1.4	1.3	38.8	36.4	-2.5	1.1	0.9
High debt	57.8	52.1	1.6	1.5	64.7	60.0	-1.3	1.0	1.8
Low debt	13.4	10.9	1.3	0.9	18.7	18.6	-3.3	0.9	0.2

Sources: IMF, World Economic Outlook, July 2009 Update and IMF staff calculations.

1/ IMF, World Economic Outlook, October 2007.
2/ Average primary balance needed to stabilize debt at end-2014 level if the respective debt-to-GDP ratio is less than 60 percent for advanced economies or 40 percent for emerging market economies (no shading); or to bring debt ratio to 60 percent (halve for Japan and reduce to 40 percent for emerging market economies) in 2029 (shaded entries). The analysis is illustrative and makes some simplifying assumptions: in particular, beyond 2014, an interest rate–growth rate differential of 1 percent is assumed, regardless of country-specific circumstances; moreover, the projections are "passive" scenarios based on constant policies.
3/ Pre-crisis WEO projections are not fully comparable to current WEO projections for Greece and Turkey, owing to substantial revisions in their GDP series in late 2007 and early 2008, respectively. For Turkey, fiscal projections reflect staff's estimates given the authorities' policy intentions as stated in the EU Pre-Accession Program document but they do not include measures taken by the government in July 2009 to improve the fiscal position.
4/ Does not include the impact of debt-reducing measures announced in the recent Economic and Fiscal Update.

References

Al-Eyd, Ali J., and Ray Barrell, 2005, "Estimating Tax and Benefit Multipliers in Europe," Economic Modelling, Vol. 22, pp. 759–76.

Catao, Luis, and George A. "Sandy" Mackenzie, 2006, "Perspectives on Low Global Interest Rates," IMF WP/06/76)

Cogan, John F., Tobias Cwik, John B. Taylor, and Volker Wieland, 2009, "New Keynesian versus Old Keynesian Government Spending Multipliers," NBER Working Paper No. 14782.

Dalsgaard, Thomas, Christophe André, and Pete Richardson, 2001, "Standard Shocks in the OECD Interlink Model," OECD Economics Department Working Paper No. 306.

European Commission, 2009 Ageing Report, Economic and Budgetary Projections for the EU-27 Member States (2008–60), (Brussels: EC Directorate General for Economic and Financial Affairs).

Freeman, Charles, Michael Kumhof, Douglas Laxton, and Jaewoo Lee, 2009, "The Case for Global Stimulus," IMF, Research Department (Washington: International Monetary Fund).

HM Treasury, 2003, "Fiscal Stabilization and EMU," Discussion Paper.

Ilzetzki, Ethan, and Carlos A. Végh, 2008, "Procyclical Fiscal Policy in Developing Countries: Truth or Fiction?" NBER Working Paper No. 14191.

International Monetary Fund, 2009, Collecting Taxes During an Economic Crisis: Challenges and Policy Options, SPN/09/17, (Washington: International Monetary Fund).

———, 2009, "Fiscal Implications of the Global Economic and Financial Crisis," SPN/09/13 (Washington: International Monetary Fund).

———, 2009, "Fiscal Multipliers," SPN/09/11 (Washington: International Monetary Fund).

———, 2009, "IMF Note on Global Economic Policies and Prospects" (Washington: International Monetary Fund).

———, 2009, "IMF Note on Global Economic Prospects and Effectiveness of Policy Response" (Washington: International Monetary Fund).

———, 2009, "The State of Public Finances: Outlook and Medium-Term Policies After the 2008 Crisis" (Washington: International Monetary Fund).

———, 2009, “World Economic Outlook Update: Contractionary Forces Receding But Weak Recovery Ahead” (Washington: International Monetary Fund).

Perotti, Roberto, 2006, “Public Investment and the Golden Rule: Another (Different) Look,” IGIER Working Paper No. 277.

———, 2005, “Estimating the Effects of Fiscal Policy in OECD Countries,” CEPR Discussion Paper No. 4842.

Romer, Christina, and David Romer, 2008, “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks,” Mimeo, University of California, Berkeley.

U.S. Congressional Budget Office, 2009, The Long-Term Budget Outlook. Federal Debt Held by the Public Under CBO's Two Budget Scenarios, (Washington, D.C: U.S. CBO).

Zandi, Mark, 2008, “Assessing the Macro Economic Impact of Fiscal Stimulus 2008,” Moody’s, Mimeo.