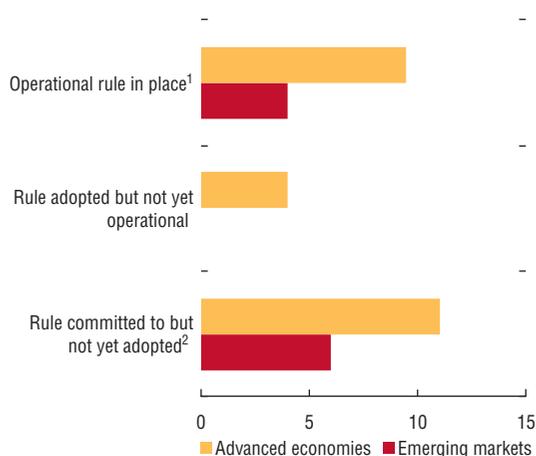


Figure 18. Number of Countries with Budget Balance Rules Accounting for the Cycle



Sources: National authorities; and IMF staff assessments.

¹Includes countries with a clearly specified transition path.

²Includes EU member states that have signed the Fiscal Compact but have not yet adopted a rule that accounts for the cycle.

cies.¹⁷ In a number of euro area economies (Austria, Germany, Ireland, Italy, Portugal, Spain), legislation, often at the constitutional level, now requires maintaining roughly balanced structural fiscal positions over the medium term. The new rules typically include transition arrangements before taking full effect (for example, in Austria until 2017, in Portugal until 2015, and in Spain until 2020), and operational details still need to be legislated (for example, in Italy by February 2013). By formulating new fiscal rules in structural terms, the countries adopting them avoid the pitfalls of having to make procyclical adjustments to their fiscal stances. Rules that provide some flexibility to deal with economic shocks are clearly on the rise outside the European Union as well, for example, in Colombia and Serbia (Figure 18).¹⁸

Many countries are reforming institutional arrangements to further strengthen budget implementation and monitoring processes (Table 5). For example, a new commitment control law is beginning to take effect in Portugal. Greece, Ireland, and

Portugal are moving toward setting up medium-term budget frameworks; Greece has adopted a medium-term fiscal strategy, Ireland has established three-year expenditure ceilings for each ministry, and Portugal's Stability Program now includes indicative ceilings on program-level expenditures. Moreover, many countries are setting up independent bodies with mandates that include monitoring of fiscal policies or the implementation of fiscal rules, and raising public awareness of fiscal issues. Examples include the United Kingdom's Office for Budget Responsibility, established in 2010, and the fiscal councils set up in Ireland and Portugal in 2011. In Europe, the proposed "two-pack" regulations would require euro area economies to base their budgets on independent macroeconomic forecasts and monitor the implementation of fiscal policy and rules through independent bodies (see Box 6).

3. Moving Forward

Notwithstanding the progress mentioned in the preceding section, large financing requirements remain a source of near-term fiscal vulnerability in several advanced economies, while prospective increases in age-related spending loom large over the long-term horizon for many of them. Moreover, fiscal risks around the baseline projections are on the rise across country groups, given the uncertain growth outlook and large contingent liabilities, particularly from the financial sector.¹⁹ If history is a lesson, the path to restoring fiscal sustainability will be long and arduous for most advanced economies. Maintaining adjustment efforts over the long term will require packages that mesh flexibility and credibility (through the use of structural or cyclically adjusted targets), limit adverse social effects, and boost employment and labor supply through appropriate tax and other spending policies, backed by strong fiscal institutions.

¹⁷In the context of the excessive imbalance procedure, warnings and even sanctions can be imposed.

¹⁸The new Fiscal Rules Dataset (<http://www.imf.org/external/datamapper/FiscalRules/map/map.htm>) prepared by the IMF staff covers national and supranational fiscal rules for 81 countries since 1985. For an analysis of fiscal rules adopted in response to the crisis, see Schaechter and others (2012).

¹⁹Fiscal vulnerabilities refer to weaknesses that are incorporated in the baseline fiscal forecast—for example, large borrowing need or a sharp projected increase in pension spending. Fiscal risks refer to the exposure to negative shocks that could compromise the outcome expected under the baseline forecast—for example, an unexpected increase in interest rates or a banking crisis.

Table 5. Fiscal Institutions

	National Fiscal Rules ¹						
	Budget balance rule ²					Independent Fiscal Council	Medium-Term Budget Framework
	Expenditure rule	Revenue rule	Cyclically adjusted or adjusted over the cycle	Non-cyclically adjusted	Debt rule		
Advanced economies							
Australia	✓	✓	✓		✓	✓ ⁵	Binding
Canada						✓ ⁵	Indicative
France	✓	✓	✓				Binding
Germany	✓		✓				Indicative
Greece			✓			✓ ⁵	Indicative
Ireland			✓ ³			✓	Indicative
Italy			✓ ³			✓ ³	Indicative
Japan	✓			✓			Indicative
Korea						✓	Indicative
Portugal			✓ ³			✓	Indicative
Spain	✓		✓ ³		✓		Indicative
United Kingdom			✓		✓	✓	Binding
United States	✓					✓ ⁵	Indicative
Emerging markets							
Argentina							None
Brazil	✓				✓		Indicative
China							None
Hungary			✓		✓ ⁴	✓ ⁶	Indicative
India							Indicative
Indonesia				✓	✓		Indicative
Latvia			✓				Indicative
Lithuania	✓	✓	✓		✓		Indicative
Mexico				✓			Indicative
Poland	✓		✓		✓		Indicative
Romania	✓		✓			✓	Indicative
Russian Federation							Indicative
Saudi Arabia							None
South Africa							Indicative
Turkey							Indicative

Sources: European Commission Working Papers; IMF, Fiscal Rules Dataset, 1985–2012; IMF Staff Reports; and IMF staff estimates.

¹Does not include supranational or subnational fiscal rules.

²For the EU member states, check marks refer to adoption of some form of structural budget balance rule. This includes the EU member states that have signed the Fiscal Compact but have not yet adopted a structural budget balance rule. Prospective euro area members have committed to adopting such a rule only at the time of joining the euro area. Pay-as-you-go rules adopted in Japan and the United States are not included as they limit only additional deficit-raising measures but do not cap the overall deficit.

³Adopted but has not yet taken effect.

⁴The debt rule will take effect from 2016.

⁵Refers to the Congressional Budget Office in the United States, and Parliamentary Budget Office for the rest.

⁶The fiscal council was significantly weakened following the 2011 reorganization, which reduced its budget and eliminated its dedicated staff.

Deficits decline, but the fiscal outlook remains fragile

Despite the substantial progress reported in Section 2, fiscal vulnerabilities remain elevated (Table 6). In advanced economies, persistently high debt levels, coupled with unaddressed medium-term challenges, have tended to expose budgets to market shocks. For emerging market economies, smaller debt burdens translate

into more moderate vulnerability levels, although rising deficits and looming medium-term entitlements remain important weaknesses. In advanced Europe, fiscal vulnerabilities continue to rise, while in emerging Europe they remain above those in other regions (Figure 19).²⁰

²⁰See Baldacci and others (2011) for the technical description of the estimation of the fiscal indicators index used here.

Table 6. Assessment of Fiscal Vulnerabilities over Time

	Fiscal Monitor vintages						
	Nov. 2009	May 2010	Nov. 2010	April 2011	Sept. 2011	April 2012	Oct. 2012
Advanced economies							
Australia	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Austria	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Belgium	Red	Red	Red	Red	Red	Red	Red
Canada	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Denmark	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Blue
Finland	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
France	Red	Red	Red	Yellow	Red	Yellow	Yellow
Germany	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Greece	Red	Red	Red	Red	Red	Red	Red
Ireland	Red	Red	Red	Red	Yellow	Red	Yellow
Italy	Red	Red	Red	Yellow	Yellow	Yellow	Red
Japan	Red	Yellow	Red	Red	Yellow	Yellow	Red
Korea	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Netherlands	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Portugal	Red	Red	Red	Red	Red	Red	Red
Spain	Red	Red	Red	Red	Red	Yellow	Red
United Kingdom	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
United States	Red	Red	Red	Red	Yellow	Yellow	Yellow
Emerging markets							
Argentina	Yellow	Yellow	Yellow	Yellow	Blue	Yellow	Yellow
Brazil	Red	Yellow	Yellow	Red	Yellow	Yellow	Yellow
Chile	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Blue
China	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
India	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow
Indonesia	Yellow	Blue	Yellow	Yellow	Blue	Yellow	Yellow
Malaysia	Red	Red	Red	Red	Red	Red	Red
Mexico	Yellow	Red	Red	Yellow	Red	Yellow	Yellow
Pakistan	Red	Red	Red	Red	Red	Red	Red
Philippines	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Poland	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Russian Federation	Yellow	Yellow	Yellow	Blue	Yellow	Yellow	Yellow
Saudi Arabia	Blue	Blue	Blue	Blue	Blue	Blue	Blue
South Africa	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Thailand	Red	Red	Red	Red	Red	Red	Red
Turkey	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Sources: Bloomberg L.P.; Consensus Economics; Thomson Reuters Datastream; and IMF staff estimates and projections.

Note: To allow for cross-country comparability, a uniform methodology is used to assess vulnerability. In-depth assessment of individual countries would require case-by-case analysis using a broader set of tools. Based on fiscal vulnerability indicators presented in Table 7, red (yellow, blue) implies high (medium, moderate) levels of fiscal vulnerability.

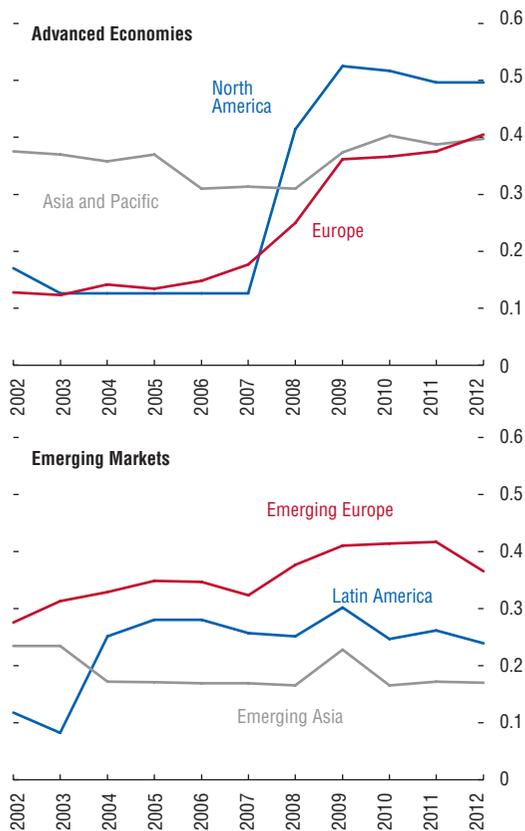
Furthermore, in some cases, vulnerabilities stemming from uncertainties about growth and potential contingent liabilities continue to cloud fiscal developments, especially in advanced economies (Table 7).²¹

²¹Table 7 uses a uniform methodology for each vulnerability indicator to allow for cross-country comparability. In-depth assessment of individual countries would require case-by-case analysis using a broader set of tools.

Large gross financing requirements make most advanced economies highly vulnerable to shifts in market sentiment (Table 8).²² Among the advanced economies, Japan and the United States face the biggest gross financing requirements in the coming years because of their large debt stocks and sizable

²²Financing requirements will remain at peak levels in 2012–13 (close to 25 percent of GDP on average), despite the decline in deficits, because of continually high rollover needs.

Figure 19. Fiscal Indicators Index by Region, 2002–12
(Scale, 0–1)



Sources: Baldacci and others (2011); and IMF staff calculations.
Note: 2009 GDP weights at purchasing power parity used to calculate weighted averages. Larger values of the index suggest higher levels of fiscal vulnerability.

deficits as well as the still-relatively-short maturities of their debt.²³ High sovereign spreads have pushed Italy and Spain to shorten the maturity of new issuances in order to reduce financing costs (Figure 20), but these countries' rollover needs are expected to decline as a share of GDP. Financing needs in emerging market economies are also projected to continue to trend down on average, owing to the cumulative impact of falling deficits (Table 9). Exceptions include Hungary and Pakistan, where maturing debt is rising. Though declining, financ-

²³In cases in which net debt-to-GDP ratios are considerably lower than gross ratios, the focus on headline debt ratios may overstate the degree of short-term financial pressure faced by some governments. See the April 2012 *Fiscal Monitor*.

ing requirements in Brazil remain on the high side, reflecting the relatively short maturity structure of the largely domestic public debt.

Age-related spending remains a growing burden in both advanced and emerging market economies, notwithstanding reforms discussed above. Without further measures, pension and health care spending is expected to rise by more than 4 percent of GDP by 2030 in advanced economies and by more than 3 percent of GDP in emerging market economies (see Statistical Tables 12a and 12b). In advanced economies, the biggest challenge is rising health care costs, which are in part due to technological change. Only a few countries, including Denmark and Italy, have managed to minimize the expected impact of age-related spending on future deficits. In emerging market economies, the biggest challenge is pension-related spending. Chile and Poland are among the few emerging market economies in which entitlement spending is expected to remain at bay.

Downside risks to debt dynamics are worsening. First, market analysts increasingly expect lower growth in advanced as well as emerging market economies (see the October 2012 WEO [IMF, 2012g]). This would weaken budget positions and in many cases further complicate debt dynamics. Second, the risks emanating from market volatility continue to plague some euro area countries, and only the few of them benefiting from safe-haven flows have seen this risk recede. As interest rate–growth differentials have trended upward, the effort required to stabilize debt has increased: if this differential had remained at 2010 levels, the primary balance needed to stabilize public debt in Greece, Portugal, and Italy would be, respectively, 6.5 percentage points, 6.2 percentage points, and 4.4 percentage points lower than at present.

Emerging market economies are also vulnerable to adverse debt dynamics. Interest rates have remained broadly stable in these economies in recent months, but in several cases fiscal projections presume a decline in rates. The fiscal outcome could thus be weaker than expected should lower rates not materialize.²⁴ In addition, interest rate–growth differentials

²⁴Historically, the interest rate–growth differential has been subject to higher volatility in emerging market economies, in part

Table 7. Assessment of Fiscal Vulnerabilities, October 2012

	Baseline Fiscal Assumptions ¹				Shocks Affecting the Baseline			
	Gross financing needs ²	Interest rate–growth differential ³	Cyclically adjusted primary deficit ⁴	Gross debt ⁵	Increase in health and pension spending, 2010–30 ⁶	Growth ⁷	Interest rate ⁸	Contingent liabilities ⁹
Advanced economies								
Australia		↘	↘			↑	↘	
Austria						↗	↘	↘
Belgium						↗	↗	↑
Canada						↘		
Denmark	↘	↘	↘			↘	↘	
Finland		↘					↗	↘
France		↗					↘	↑
Germany		↗						
Greece								
Ireland			↘					
Italy						↑	↗	↑
Japan		↗						↗
Korea								
Netherlands						↑	↘	
Portugal							↑	
Spain							↑	↑
United Kingdom		↘	↘				↘	↗
United States								
Emerging markets								
Argentina				↘		↗		
Brazil								
Chile						↘		
China						↗		
India						↘		↘
Indonesia			↑				↘	
Malaysia								
Mexico						↑		↗
Pakistan								
Philippines								
Poland						↗		
Russian Federation								
Saudi Arabia		↗						
South Africa				↑		↘	↘	
Thailand								↗
Turkey						↘		

Sources: Bloomberg L.P.; Consensus Economics; Thomson Reuters Datastream; and IMF staff estimates and projections.

Note: To allow for cross-country comparability, a uniform methodology is used for each vulnerability indicator. In-depth assessment of individual countries would require case-by-case analysis using a broader set of tools. Fiscal data correspond to IMF staff forecasts for 2013 for the general government. Market data used for the *Growth*, *Interest rate*, and *Contingent liabilities* indicators are as of August 2012. A blank cell indicates that data are not available. Directional arrows indicate that, compared to the previous *Fiscal Monitor*, vulnerability signaled by each indicator is higher (↑), moderately higher (↗), moderately lower (↘), or lower (↓). No arrow indicates no change compared to the previous *Fiscal Monitor*.

¹ Red (yellow, blue) implies that the indicator is above (less than one standard deviation below, more than one standard deviation below) the corresponding threshold. Thresholds are from Baldacci, McHugh, and Petrova (2011) for all indicators except the increase in health and pension spending, which is benchmarked against the corresponding country group average.

² For advanced economies, gross financing needs above 17.2 percent of GDP are shown in red, those between 12.9 and 17.2 percent of GDP are shown in yellow, and those below 12.9 percent of GDP are shown in blue. For emerging markets, gross financing needs above 20.6 percent of GDP are shown in red, those between 16.3 and 20.6 percent of GDP are shown in yellow, and those below 16.3 percent of GDP are shown in blue.

³ For advanced economies, an interest rate–growth differential above 3.6 percent is shown in red, one between 0.3 and 3.6 percent is shown in yellow, and one below 0.3 percent is shown in blue. For emerging markets, an interest rate–growth differential above 1.1 percent of GDP is shown in red, one between –4.4 and 1.1 percent of GDP is shown in yellow, and one below –4.4 percent of GDP is shown in blue.

⁴ For advanced economies, cyclically adjusted deficits above 4.2 percent of potential GDP are shown in red, those between 1.8 and 4.2 percent of potential GDP are shown in yellow, and those below 1.8 percent of potential GDP are shown in blue. For emerging markets, cyclically adjusted deficits above 0.5 percent of potential GDP are shown in red, those between –1.3 and 0.5 percent of potential GDP are shown in yellow, and those below –1.3 percent of potential GDP are shown in blue.

⁵ For advanced economies, gross debt above 72.2 percent of GDP is shown in red, that between 56.9 and 72.2 percent of GDP is shown in yellow, and that below 56.9 percent of GDP is shown in blue. For emerging markets, gross debt above 42.8 percent of GDP is shown in red, that between 29.4 and 42.8 percent of GDP is shown in yellow, and that below 29.4 percent of GDP is shown in blue.

⁶ For advanced economies, an increase in spending above 3 percent of GDP is shown in red, one between 0.6 and 3 percent of GDP is shown in yellow, and one below 0.6 percent of GDP is shown in blue. For emerging markets, an increase in health and pension spending above 2 percent of GDP is shown in red, one between 0.3 and 2 percent of GDP is shown in yellow, and one below 0.3 percent of GDP is shown in blue.

⁷ Risk to real GDP growth is measured as the ratio of the downside risk to the upside risk to growth, based on one-year-ahead real GDP growth forecasts by market analysts included in the Consensus Forecast. It is calculated as the standard deviation of market analysts' growth forecasts below the Consensus Forecast mean (downside risk, or DR), divided by the standard deviation of market analysts' growth forecasts above the Consensus Forecast mean (upside risk, or UR). This ratio is then averaged over the most recent three months. Cells are shown in red if downside risk is 25 percent or more higher than upside risk ($DR/UR > 1.25$), in yellow if downside risk is less than 25 percent higher than upside risk ($1 < DR/UR \leq 1.25$), and in blue if downside risk is lower than or equal to upside risk ($DR/UR \leq 1$).

⁸ Risks to the financing cost underpinning the fiscal projection are measured as the difference between the current 10-year sovereign bond yield and the long-term bond yield (LTBY) assumption included in the *Fiscal Monitor* projections. Cells are shown in red if the current bond yield is above or equal to the LTBY, in yellow if the current bond yield is 100 basis points or less below the LTBY, and in blue if the current bond yield is more than 100 basis points below the LTBY.

⁹ Fiscal contingent liabilities are proxied by banking sector uncertainty, measured as the conditional volatility of monthly bank stock returns, using an exponential generalized autoregressive conditional heteroskedastic (EGARCH) model which allows asymmetric volatility changes to positive versus negative shocks in stock returns. The rationale is as follows: bank stock returns capture market expectations of banks' future profitability and therefore—indirectly—banks' ability to maintain required capital. Higher volatility of bank returns can create uncertainty with respect to banks' ability to safeguard capital (see Sankaran, Saxena, and Erickson, 2011), increasing the probability that banks will need to be recapitalized, thereby resulting in contingent liabilities for the sovereign. Cells are shown in red if current volatility is more than two standard deviations above the historical average for January 2000–December 2007, in yellow if it is above the historical average by up to two standard deviations, and in blue if it is below or equal to the historical average.

Table 8. Selected Advanced Economies: Gross Financing Needs, 2012–14
(Percent of GDP)

	2012			2013			2014		
	Maturing debt	Budget deficit	Total financing need	Maturing debt ¹	Budget deficit	Total financing need	Maturing debt ¹	Budget deficit	Total financing need
Japan	49.3	10.0	59.4	51.3	9.1	60.4	50.7	7.2	57.9
Italy	27.4	2.7	30.1	23.5	1.8	25.3	23.8	1.6	25.4
Greece ²	21.4	7.5	28.9	12.9	4.7	17.6	14.0	3.4	17.4
Portugal ³	22.4	5.0	27.4	17.3	4.5	21.7	19.7	2.5	22.2
United States	17.6	8.7	26.3	20.0	7.3	27.3	20.6	5.6	26.1
Spain	15.6	7.0	22.6	15.6	5.7	21.3	15.5	4.6	20.1
Belgium	16.4	3.0	19.4	17.5	2.3	19.8	17.2	1.5	18.7
France	13.8	4.7	18.5	15.9	3.5	19.4	15.4	2.8	18.2
Canada	12.7	3.8	16.5	15.1	3.0	18.2	16.0	2.2	18.2
Ireland ⁴	4.3	11.6	15.9	5.7	8.7	14.4	6.5	6.0	12.5
United Kingdom	6.9	8.2	15.1	7.4	7.3	14.7	9.4	5.8	15.1
Netherlands	10.4	3.7	14.1	11.3	3.2	14.5	11.8	3.6	15.4
Slovak Republic	7.5	4.8	12.3	10.0	2.9	12.9	9.7	2.9	12.6
Czech Republic	9.0	3.2	12.3	9.3	3.0	12.3	10.1	2.8	12.8
Denmark	7.8	3.9	11.7	8.5	2.0	10.5	7.8	1.9	9.7
Iceland	7.4	2.8	10.2	7.9	1.6	9.5	5.0	0.5	5.5
New Zealand	4.7	4.3	9.0	10.2	2.7	13.0	5.9	1.0	6.9
Finland	7.2	1.4	8.6	7.2	0.9	8.1	7.5	0.3	7.8
Austria	5.6	2.9	8.5	6.3	2.1	8.4	8.8	1.8	10.6
Germany	8.1	0.4	8.5	7.9	0.4	8.3	5.4	0.3	5.7
Slovenia	3.3	4.6	7.9	3.3	4.4	7.7	5.8	2.8	8.6
Australia	2.4	2.8	5.3	3.0	1.0	4.0	3.2	0.3	3.6
Sweden	4.4	0.2	4.7	2.5	0.2	2.7	5.2	-0.2	5.1
Switzerland	3.3	-0.5	2.8	3.0	-0.5	2.5	2.8	-0.8	2.0
Korea	3.3	-2.0	1.3	3.3	-2.7	0.6	3.8	-2.8	1.0
Norway	4.0	-13.4	-9.3	6.0	-12.5	-6.5	3.8	-11.3	-7.5
Average	18.7	6.1	24.7	19.8	5.0	24.8	19.9	3.9	23.8

Sources: Bloomberg L.P.; and IMF staff estimates and projections.

Note: For most countries, data on maturing debt refer to central government securities. For some countries, general government deficits are reported on an accrual basis (see Table SA.1).

¹ Assumes that short-term debt outstanding in 2012 and 2013 will be refinanced with new short-term debt that will mature in 2013 and 2014, respectively. Countries that are projected to have budget deficits in 2012 or 2013 are assumed to issue new debt based on the maturity structure of debt outstanding at the end of 2011.

² Greece's maturing debt assumes 90 percent participation in the Private Sector Involvement (PSI) debt exchange program.

³ Maturing debt expressed on a nonconsolidated basis.

⁴ Ireland's cash deficit includes exchequer deficit, other government cash needs, and bank/credit union recapitalization.

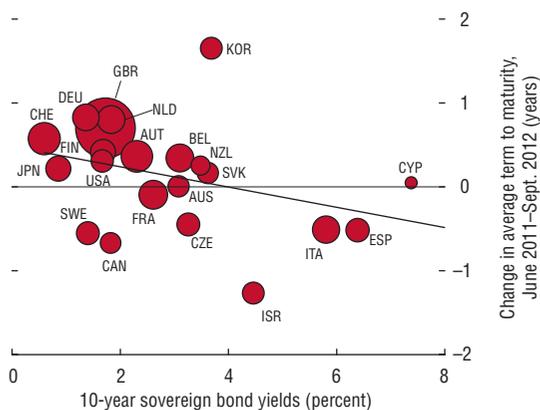
in emerging market economies could be pushed to higher-than-projected levels over the medium term if potential GDP is overestimated (lower g), or if greater financial integration brings real rates more in line with those in international markets (higher r), as discussed in Escolano, Shabunina, and Woo (2011).

Debt risks have also increased for low-income countries, which have limited access to capital markets and rely heavily on concessional financing. Although significant additional official financ-

because of their greater share of foreign-currency-denominated debt and the resulting higher exchange rate risk.

ing was made available during the crisis (including from the IMF and front-loaded disbursements from donors), such financing is expected to decline in the near term, reflecting in part rising constraints on donor budgets (Figure 21). Moreover, the profile of external financing is projected to shift from budget support loans to concessional project loans, which could result in significant disbursement delays if implementation capacity is poor. Greater access to nonconcessional financing would require better institutions (including public financial management systems and investment project procurement and evaluation). Although the interest rate–growth differ-

Figure 20. Advanced Economies: Sovereign Bond Yields and Average Bond Maturity



Sources: Bloomberg L.P.; and IMF staff estimates.

Note: As of mid-September 2012. Bubble size denotes average term to maturity in years.

ential is projected to remain negative in the medium term, higher effective interest rates caused by the change in financing composition will gradually increase it. Combined with historically high growth rate volatility in low-income countries, this calls for a more cautious approach to debt accumulation in some of these countries.

Contingent liabilities, particularly those arising from the financial sector, continue to pose a risk to budgets (see the October 2012 *Global Financial Stability Report*), especially in Europe. Compared to the direct cost of financial sector support in previous crises, the cost of the current crisis has been relatively small so far: the average net fiscal outlay is below 5 percent of GDP, and one-third of the support has already been repaid (see Box 4). However, the cost has been much higher in some countries (Greece, Ireland).

Moreover, the explicit contingent liabilities in guarantee schemes are, in some cases, much larger than the direct support itself (Figure 22). The use of government guarantees has been particularly pronounced in some euro area countries where banks had to turn to the European Central Bank and use these guarantees as collateral to replace lost funding. Implicit contingent liabilities could also rise if the economic outlook deteriorates further, weakening private sector balance sheets, and the availability of

collateral to access central bank liquidity continues to dwindle in the euro area (partly reflecting changes in asset eligibility), pushing national central banks to provide emergency liquidity assistance (Figure 23). To lower the risks from such linkages between sovereigns and banks, it is important to proceed swiftly with a coherent strategy to restore banking sector viability in Europe. From that perspective, the measures recently announced are steps in the right direction, but they will have to be complemented with further action toward a full-fledged banking union and deeper fiscal integration. Though banking sector contingent liabilities are less pronounced in emerging economies, this could change if growth falters. In addition, contingent liabilities could rise from the growing use of public-private partnerships and other vehicles designed to scale up infrastructure spending without compromising near-term deficit targets.

Adjustment momentum must be calibrated for the long haul

Debt ratios in many advanced economies are at unprecedented levels, and the fiscal effort required to address them will in many cases also be without precedent. In particular, many advanced economies need to achieve primary balances that are well above what would be expected, based on how they have responded to previous fiscal challenges (Figure 24). So fiscal consolidation would need to be more ambitious than in the past and maintained over a long period in order to bring debt down.

Case studies of historical experiences with high debt (see Chapter 3 of the October 2012 WEO [IMF, 2012g]) show that successful fiscal consolidation takes time and that ultimate success is built on sustained efforts over many years. In addition, if fiscal consolidation is to reduce debt, it must be accompanied by a supportive monetary policy stance. In some cases, inflation has helped lower public debt, although the process has often been assisted by (implicit or explicit) financial repression. In the absence of financial repression (that is, assuming that nominal interest rates are allowed to respond fully to higher inflation expectations), only a very large surprise inflation could bring down

Table 9. Selected Emerging Markets: Gross Financing Needs, 2012–13
(Percent of GDP)

	2012			2013		
	Maturing debt	Budget deficit	Total financing need	Maturing debt	Budget deficit	Total financing need
Pakistan	23.9	6.4	30.2	23.8	7.2	31.0
Brazil	15.8	2.1	17.9	15.4	1.6	17.0
Hungary	13.8	2.9	16.7	15.2	3.7	18.9
India	4.4	9.5	13.9	2.1	9.1	11.3
Morocco ¹	4.9	6.7	11.6	7.0	6.5	13.5
Poland	8.1	3.4	11.5	8.4	3.1	11.6
Mexico	8.8	2.4	11.2	8.3	2.1	10.4
Romania	8.7	2.2	10.9	8.8	1.8	10.6
Ukraine	7.2	3.1	10.4	11.2	3.1	14.3
Philippines	8.1	1.9	9.9	8.6	1.2	9.9
Turkey	7.6	1.7	9.4	8.3	1.9	10.3
Thailand	6.3	3.0	9.3	5.4	3.8	9.1
Lithuania	5.7	3.3	9.0	5.6	2.9	8.4
China ²	6.9	1.3	8.2	4.6	1.0	5.6
Argentina ²	3.5	4.6	8.1	4.3	2.5	6.8
Malaysia	3.4	3.8	7.3	1.9	4.3	6.3
Jordan	0.7	6.5	7.2	0.1	5.5	5.6
South Africa	1.4	5.0	6.4	1.7	4.7	6.5
Latvia	4.3	1.3	5.6	4.2	1.5	5.7
Colombia	4.6	0.8	5.4	5.3	1.2	6.4
Indonesia	1.2	1.6	2.9	1.4	2.0	3.4
Bulgaria	1.6	1.1	2.7	2.6	1.1	3.7
Chile	0.9	0.3	1.2	1.2	0.6	1.8
Russian Federation	1.2	-0.5	0.7	1.1	-0.2	0.9
Peru	0.9	-1.8	-0.9	1.0	-1.4	-0.4
Kazakhstan	1.3	-3.6	-2.3	1.6	-3.7	-2.1
Average	6.8	2.3	9.2	5.7	2.1	7.8

Sources: IMF staff estimates and projections.

Note: Refers to general government. For some countries, general government deficits are reported on an accrual basis (see Table SA.2).

¹Budget deficit on a cash basis, not accrual as in Statistical Table 5.

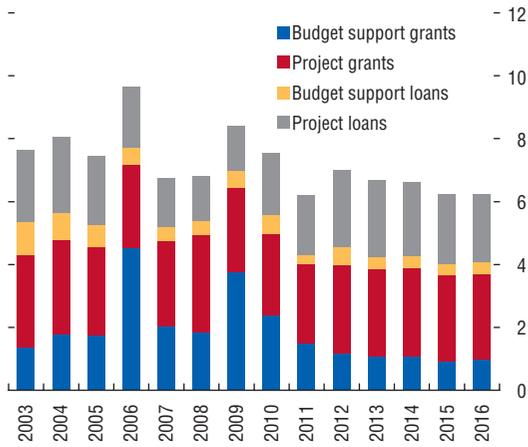
²For details, see "Data and Conventions" in the Methodological and Statistical Appendix.

public debt ratios significantly.²⁵ In today's context of greater financial globalization, a captive domestic investor base may be more difficult to maintain than in the past. The privatization of nonfinancial assets could be explored as an option for bringing down debt, but the value of these assets is hard to quantify, and their sale may be difficult under volatile market conditions (Box 7).

²⁵Simple calculations suggest that an increase in inflation by 3 percentage points consistently during 2013–17, compared to the WEO baseline, would reduce debt on average in advanced G-20 economies by only 9.6 percent of GDP by 2017. To lower debt more significantly, for example, to 60 percent of GDP in the United States, would require that inflation reach 30 percent for 2013–15 and remain at 8 percent thereafter.

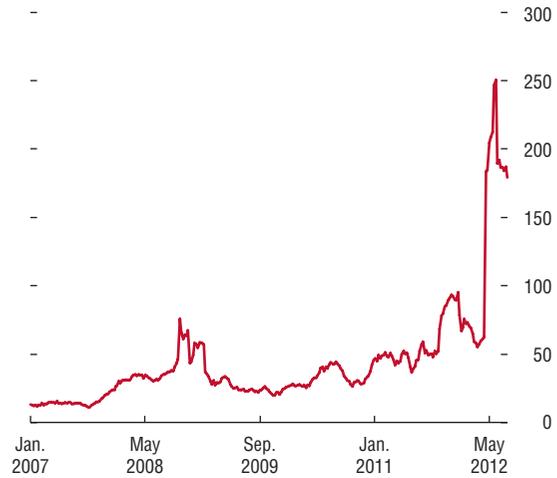
Importantly, restructuring is not a low-cost option to reduce sovereign debt. Debt restructuring tends to lead to higher government borrowing rates over the medium term, which is then transmitted to domestic lending rates, bringing about a significant contraction in credit, investment, and consumption. If, in addition, a large portion of public debt is held domestically, as in most advanced economies, domestic bondholders will have to absorb the capital losses. If debt is held by neighboring countries (as in the euro area), spillover effects can be very large. Figure 25 illustrates how the cost of debt restructuring in terms of consumption and output losses increases with the share of public debt held by domestic investors. Nonetheless, in some cases debt

Figure 21. Low-Income Countries: Concessional Financing (Percent of GDP)



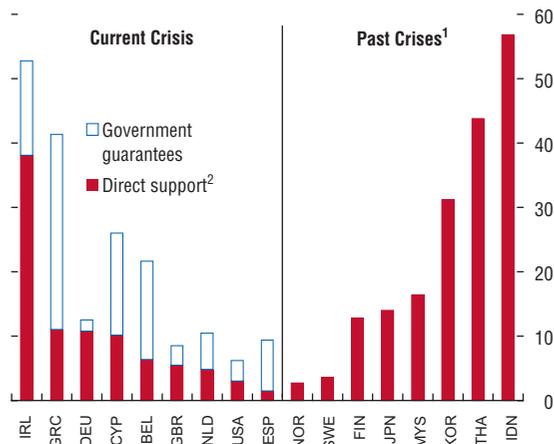
Sources: Guerguil, Poplawski-Ribeiro, and Shabunina (2012); and IMF staff estimates and projections.
 Note: Average for low-income countries and fragile states in Africa, with oil producers excluded.

Figure 23. Eurosystem: Other Claims on Banks (Billions of euros)



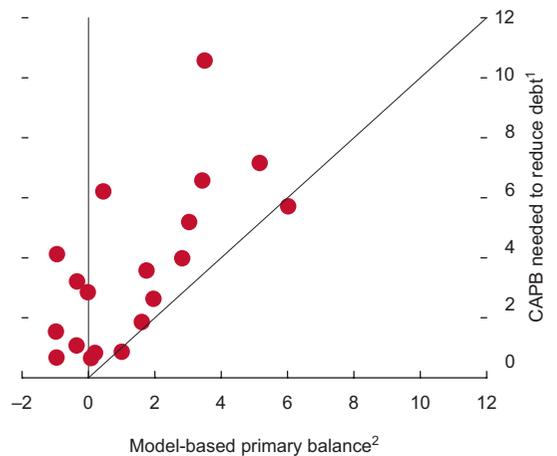
Source: European Central Bank.
 Note: Includes Emergency Liquidity Assistance.

Figure 22. Selected Countries: Financial Sector Support Measures (Percent of GDP)



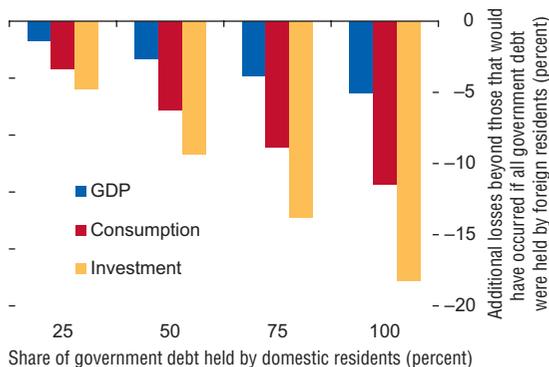
Sources: Dealogic; European Commission; Laeven and Valencia (2012); national authorities; and IMF staff estimates.
 Note: Government guarantees correspond to bonds issued by private and public banks and financial institutions and carrying state guarantees. Short-term debt is not included.
¹Dates of crises are as follows: Sweden (1991–95), Norway (1991–93), Finland (1991–95), Japan (1997–2001), Malaysia (1997–99), Korea (1997–98), Thailand (1997–2000), and Indonesia (1997–2001).
²For past crises, direct support refers to the component of gross fiscal outlays associated with bank recapitalizations but excludes asset purchases and direct liquidity assistance from the treasury.

Figure 24. Advanced Economies: Model-Based Primary Balance and CAPB Needed to Reduce Debt (Percent of GDP)



Sources: Zeng (2012); and IMF staff estimates and projections.
¹Cyclically adjusted primary balance (CAPB) needed to reduce debt is based on methodology described in Statistical Table 13a.
²Model-based primary balance illustrates the primary balance that would be expected if historical relationships with macroeconomic conditions continue to hold true, based on Zeng (2012). It is calculated as the fitted values of an econometric model, estimated from a panel of 61 countries over 1990–2007, that includes determinants such as real GDP growth, interest rate–growth differential, initial debt stock, private savings, inflation, and a political risk index.

Figure 25. Postrestructuring Losses and Domestic Investors



Source: Forni and Pisani (2012).

Note: Figure shows average additional losses, in the two years after sovereign restructuring, beyond those that would have occurred if all debt were held by foreign residents. Simulations were performed using a general equilibrium model of one country within the euro area and assuming a 40 percent haircut. Results are illustrative and should be interpreted with care, as they depend on a number of assumptions.

restructuring has proven unavoidable for ensuring the sustainability of the public finances.²⁶

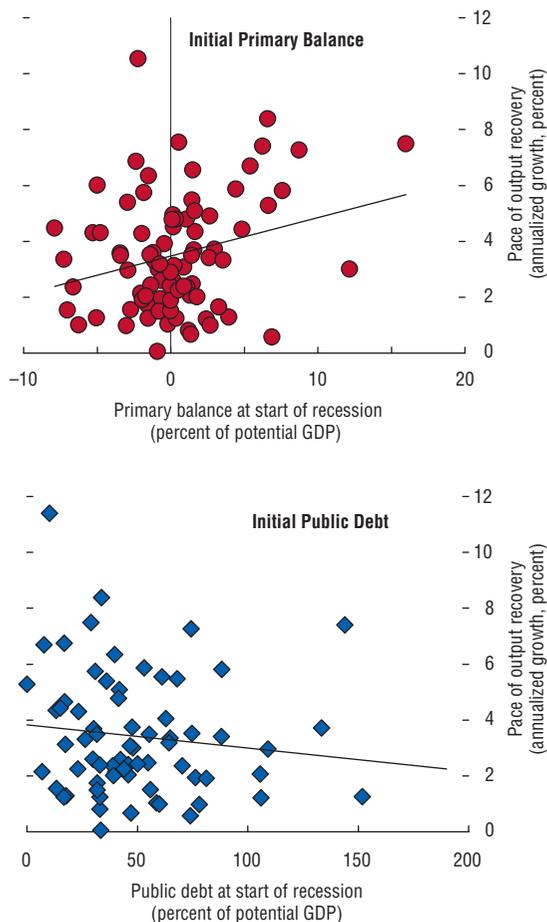
Countries with relatively comfortable debt ratios do not need to lower them at an aggressive pace. They should, however, aim at maintaining reasonable fiscal buffers to improve their capacity to confront future shocks. A stronger fiscal position—as measured by a low public debt ratio or relatively large primary surplus at the start of recession—is associated with a faster recovery (Figures 26 and 27). For example, a primary balance higher by 1 percent of GDP at the start of recession is associated with a 10 percent increase in the likelihood of exiting the recession (Kinda, Poplawski-Ribeiro, and Woo, 2012).²⁷

The use of structural or cyclically adjusted targets can enhance the credibility and viability of medium-term adjustment plans. Such targets, when set in the context of fully specified multiyear plans, provide sufficient flexibility to respond to moderate

²⁶For examples of debt restructurings, see Panizza, Sturzenegger, and Zettelmeyer (2009).

²⁷A faster recovery is indicated both by the strength of real GDP growth once the recovery starts and by the number of years before GDP returns to precrisis levels. The calculation controls for other variables such as recession depth, initial trade openness, initial oil price, and inflation at the start of recession.

Figure 26. Initial Fiscal Position and Output Recovery Rate

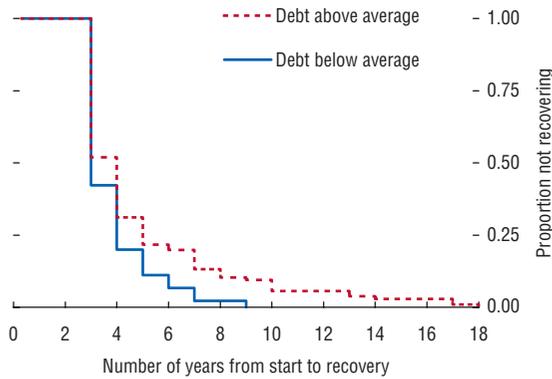


Source: Kinda, Poplawski-Ribeiro, and Woo (2012).

fluctuations in economic activity without bringing underlying fiscal progress into question. In Europe, several countries have explicitly adopted structural balance targets (Germany, Italy, United Kingdom), and the European Commission is increasingly formulating its recommendations in structural terms for nonprogram countries. Once a credible plan has been defined, the pace of underlying consolidation should be adjusted only in response to large shocks to growth, in the context of a reassessment of the overall macroeconomic policy mix, and only as long as there is sufficient fiscal space to do so.

To further buttress the durability of reforms, consolidation needs to be accompanied by measures that enhance growth in both the short and long run.

Figure 27. Time to Recovery and Initial Conditions



Source: Kinda, Poplawski-Ribeiro, and Woo (2012).
 Note: Average debt, based on a sample of 151 recession/recovery episodes of 54 advanced and emerging market economies during the period 1960–2009, is 50 percent of GDP.

In many advanced economies, including most in the euro area, reviving long-term growth will require tackling long-standing structural rigidities to boost competitiveness. However, structural reforms will take time to generate growth, and therefore measures are needed to support aggregated demand and the orderly working of financial markets until reforms begin to bear fruit.

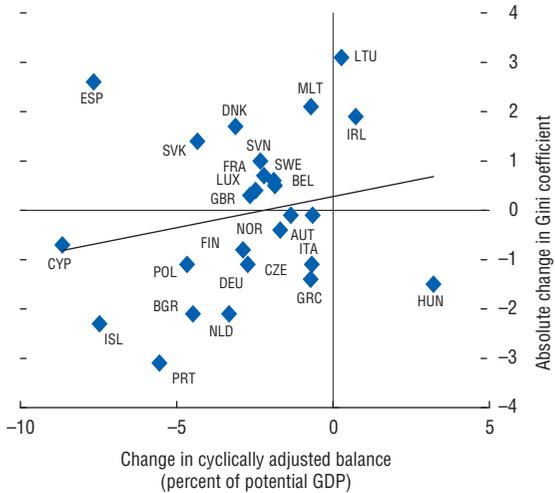
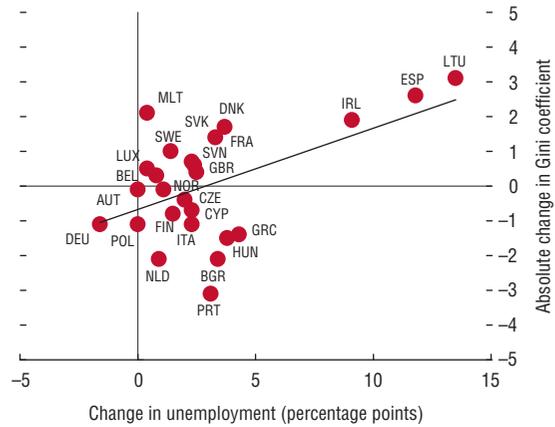
Fiscal adjustment should be better tailored to support social equity and long-term employment

Large and protracted fiscal consolidation is likely to impose a social toll, raising the additional challenge of how to prevent adjustment from exacerbating the increase in income inequality accompanying the downturn in growth.²⁸ Studies confirm the intuition that income inequality tends to rise during periods of fiscal adjustment, especially when the adjustment is based on a retrenchment in spending (Appendix 1), although the distributional impact of failing to adjust could be even worse.²⁹ Although experience suggests that the distributional effects of

²⁸Bastagli, Coady, and Gupta (2012) clarify the various channels through which income distribution has been affected by fiscal consolidation.

²⁹This would be the case if delayed consolidation results in an eventual debt crisis that forces a sudden, even greater fiscal adjustment, accompanied by a severe recession.

Figure 28. Selected European Countries: Change in Unemployment, Cyclically Adjusted Balance, and the Gini Coefficient, 2007–10



Sources: European Union, Statistics on Income and Living Conditions (EU-SILC); and IMF staff estimates.

a crisis can take many years to work through the system, some patterns already seem to be surfacing.

- Inequality has tended to rise most in those countries with the sharpest increases in unemployment (Ireland, Lithuania, Spain) and to a lesser extent in those that provided less discretionary fiscal support during the crisis (Figure 28).
- In Ireland, inequality declined early in the crisis because of a relatively large fall in top incomes (especially capital incomes), tax increases, and an expansion of redistributive social transfers. However, as the crisis deepened and fiscal consolidation intensified, income inequality started to widen (Box 8).

Table 10. Fiscal Policy Measures to Increase Employment

	Expenditure policy	Tax policy
Short term	<ul style="list-style-type: none"> • Hiring and wage subsidies • Employment support schemes • Public work programs 	<ul style="list-style-type: none"> • Reducing labor taxes (fiscal devaluation: shifting from labor to consumption taxes) • Lowering business taxes
Medium term	<ul style="list-style-type: none"> • Expanding effective active labor market programs • Strict eligibility criteria and job search requirements for social benefits • Reducing the duration and level of social benefits when too high • Child care subsidies • Increasing effective retirement age • Strengthening rules for disability pensions 	Lowering labor tax wedge, targeted to: <ul style="list-style-type: none"> • Women/secondary earners (moving from family taxation to individual taxation) • Older workers (earnings tax credits) • Low-skilled workers (tax relief to employers and in-work tax credit)

Source: IMF (2012b).

- In Italy, where employment has not fallen so sharply, the Gini coefficient increased initially by 1 percentage point (as the transfer system compensated only partially for income losses) but eventually decreased as the crisis evolved.

Adjustment packages need to be carefully designed to limit negative social effects and at the same time improve their sustainability: fiscal adjustments that are seen as unfair are unlikely to be sustainable. This implies an appropriate degree of progressivity in taxation and access to social benefits. For example, transfer cuts should be accompanied by an enhancement of social safety nets, supported by means testing and efficient monitoring.³⁰ Equity can also be improved by combating tax evasion, because large companies and wealthy individuals have stronger incentives to avoid taxes than do low-wage earners, and they may also receive a high share of their incomes in forms that are easier to shield from the scrutiny of tax authorities. In low-income countries (and some emerging market economies), reforms of fuel and food subsidies are crucial to improving the equity impact of fiscal policy. It has been shown that the rich often benefit the most from the current across-the-board subsidy systems.³¹ Public expenditure reviews conducted by the World Bank in many low-income countries show that pov-

erty reduction targets could be achieved with fewer public resources.

Better-designed tax and social benefits policies can help reduce unemployment and boost labor supply (Appendix 2 and Table 10). In the short term, a “fiscal devaluation” that reduces labor costs through lower labor-related taxes on employers, financed through higher consumption taxes, could help support the demand for labor.³² Targeting is generally required to limit budget costs as well as reduce undesirable effects on long-term employment and social equity. Tailored in-work tax credits or wage subsidies can help the young and low skilled enter the labor force; family benefit and pension systems can be retuned to encourage higher labor participation of women and the elderly; and a greater emphasis on active labor market programs (ALMPs) and conditional unemployment benefits can help reduce the hysteresis associated with long unemployment. A number of countries have already taken steps in that direction, including through expanded ALMPs (Ireland, Italy, Spain, United Kingdom), increases in the retirement age (France, Italy, Spain, United Kingdom), and measures to discourage early retirement (Denmark, Italy). Most of these reforms will be more effective if they are complemented by nonfiscal measures such as worker retraining, job search assistance, and in some cases broader labor market reforms that remove impediments to hiring and foster wage flexibility. Many of these reforms also require solid

³⁰Means testing covers less than 10 percent of public social spending in member countries of the Organisation for Economic Co-operation and Development.

³¹See Coady and others (2010) and Arze del Granado, Coady, and Gillingham (2010).

³²For an in-depth discussion of fiscal devaluations, see the September 2011 *Fiscal Monitor*.

administrative capacities to implement and monitor. Hence, the scope for fiscal policies to foster employment is more limited in emerging market economies and low-income countries, not only because of the administrative challenge, but also because of their large informal sectors and the limited reach of their

social benefit programs. In such economies, the priority should be on the development of well-targeted and well-designed social safety nets, backed by resilient funding sources and appropriate institutional and administrative capacity building.

Box 1. Commonly Used Definitions of the Fiscal Balance

The fiscal balance is of central importance for macroeconomic analysis because it offers a comprehensive picture of a government's overall fiscal stance over a given period and its resulting impact on the economy. However, there is no single best measure of the fiscal balance. Depending on the purposes of the analysis, alternative concepts of the balance, based on different analytical criteria, can be usefully employed.

The *overall balance* is perhaps the most widely cited measure of a country's fiscal situation. It is the difference between all government revenue and spending transactions during a given period. It thus reflects (if negative) the amount of additional financing the government must mobilize for its fiscal operations (the overall financing requirement will also reflect the impact of maturing debt and any financial asset transactions).

Another common deficit measure is the *primary fiscal balance*, defined as the difference between the overall balance and net interest payments. By excluding net interest payments, this measure focuses on an aggregate that is more directly under the control of the fiscal authorities and that is critical for assessing a government's ability to service its net debt, even though net interest payments may still have important effects on the economy.¹

The fiscal balance is influenced by three main sets of factors: (1) discretionary fiscal policy actions, (2) automatic stabilizers driven by the output cycle, and (3) one-off operations and cyclical effects that go beyond the output cycle. Hence, two additional balance measures are commonly employed to separate the impact of discretionary policy actions from that of nondiscretionary factors.

- The *cyclically adjusted balance (CAB)* is defined as the difference between the overall balance and the automatic stabilizers. The latter are typically defined on the basis of a measure of cyclical fluctuations, proxied by the output gap. Equivalently, the CAB is an estimate of the fiscal balance that would apply under current policies if the output gap were equal to zero.

• The *structural balance (SB)* is the difference between the CAB and two measures of other nonrecurrent effects that go beyond the output cycle:² one-time operations, that is, discretionary measures that are not expected to be repeated in the future (such as asset sales); and beyond-the-output-cycle effects, or cyclical fluctuations that do not coincide with the output cycle (e.g., changes in commodity prices or asset prices). Such effects are often especially important for commodity exporters and financial centers.

The SB provides the more precise measure of the underlying position of the fiscal accounts, and a growing number of countries (particularly in the European Union) are setting their fiscal targets in structural terms. The comparability of SBs is limited, however, by the lack of a uniform definition of one-time or beyond-the-cycle measures, which leaves a significant degree of subjective judgment in the decision of which items to remove from the CAB.

It should be noted that, as fiscal policy affects the economy through both discretionary actions and automatic stabilizers, the CAB and SB are both partial indicators of the effect of fiscal policy on aggregate demand, particularly in countries where the automatic stabilizers are relatively large (and thus need less discretionary actions in response to a demand shock). In addition, practical implementation of both measures involves complexities associated with the proper measurement of potential output, which may be especially challenging in the presence of large economic shocks and structural change.

Table 1.1 shows the magnitude of one-off measures and beyond-the-cycle effects in advanced economies, as computed by IMF staff, for 2008–13.

The IMF's recent technical note (Bornhorst and others, 2011) and website (IMF, 2012a) provide additional information on the material discussed in this box.

¹As documented in the Methodological and Statistical Appendix (Tables SA.1, SA.2, and SA.3), measures of the fiscal balance may also differ in coverage, from the narrowest (central government) to the broadest (consolidated public sector), and in accounting treatment (cash or accrual).

²The *World Economic Outlook* defines the structural balance as the general government cyclically adjusted balance modified for nonstructural elements beyond the economic cycle. The latter include temporary financial sector and asset price movements as well as one-time, or temporary, revenue and expenditure items.

Box 1 (concluded)**Table 1.1. Difference between Structural Balance and Cyclically Adjusted Balance**
(Percent of potential GDP)

	2008	2009	2010	2011	2012	2013
Australia	0.0	0.0	0.0	0.0	0.0	0.0
Austria	0.2	0.0	0.6	0.2	0.7	0.0
Canada	-0.1	0.6	0.4	0.3	0.3	0.2
Denmark	0.2	1.0	0.3	1.6	3.3	1.2
Finland	0.0	0.0	0.0	0.0	0.0	0.0
France	0.1	0.4	0.4	0.4	0.5	0.6
Germany	0.4	0.1	1.2	0.1	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0
Hong Kong SAR	-0.3	-4.7	-5.9	-6.1	-3.6	-4.3
Iceland	13.3	2.3	3.8	1.3	0.9	0.0
Ireland	0.0	0.0	0.0	0.0	0.0	0.0
Italy	-0.2	-0.6	-0.2	-0.7	-0.2	-0.1
Japan	0.0	0.0	0.0	0.0	0.0	0.0
Korea	0.0	0.0	0.0	0.0	0.0	0.0
Netherlands	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	-1.8	-0.7	-1.0	1.6	0.7	1.3
Portugal	-1.1	0.0	0.7	-3.2	-1.0	0.0
Singapore	0.0	-0.1	0.2	0.1	-0.1	0.1
Slovak Republic	0.0	0.0	0.0	0.0	0.0	0.0
Slovenia	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.3	0.7	0.3	-0.2	-0.8	-0.3
Switzerland	0.2	0.0	0.0	0.0	0.0	0.0
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.8	2.3	0.2	0.2	0.1	0.0
Average	0.3	0.9	0.2	0.0	0.0	0.0

Sources: IMF staff estimates and projections.

They are very small in most cases, although they were much larger at the onset of the crisis (especially in 2009). The types of one-off measures differ widely from country to country; they include, for example, additional savings due to an EU ruling against illegal taxation of foreign investment funds (France), adjustments for land revenue and investment income (Hong Kong), “substitute taxes” that allow taxpayers to advance the payment of certain taxes in exchange for lower payments in the future (Italy), earthquake relief funding measures (also Italy), and recapitalization of the central bank (Iceland). Also, in the aftermath of the crisis, several EU countries (including Hungary, Lithuania, and

Portugal) transferred some pension fund assets from the banking or private sectors to the public sector to increase their budget balances, in some cases temporarily. Among emerging market economies, commodity exporters, including Chile, Colombia, and Peru, exclude the effects of cyclical fluctuations in commodity prices from their structural balances.

Because of their broader coverage and more uniform definition, and to facilitate comparability across countries, the *Fiscal Monitor* primarily relies on the overall and cyclically adjusted balances. In some cases, however, structural balances are cited, particularly for countries where they are actively used by the fiscal authorities.

Box 2. Lessons from Sweden

At a time of record public debt-to-GDP ratios among advanced economies, Sweden is noteworthy for its strong public finances. At the trough of the recession in 2009, Sweden had a fiscal deficit of only 1 percent of GDP; the deficit narrowed soon after, and by 2011 its debt-to-GDP ratio was below precrisis levels. What lessons can be drawn from Sweden's experience during the global financial crisis? Four stand out.

1. The building up of fiscal buffers during good times, together with credible fiscal institutions, provides room to maneuver during bad times.

On the eve of the crisis, Sweden enjoyed a fiscal surplus of 3.5 percent of GDP, compared with an average deficit of 1.1 percent of GDP among advanced economies. Indeed, the debt-to-GDP ratio in Sweden had fallen from 70 percent in 1998 to 40 percent in 2007. The strength of the fiscal accounts was built on more than a decade of reform through spending rationalization to trim social benefits and improvements in the tax system to generate revenue.

When the recession hit (with real GDP contracting by 5 percent in 2009, compared to an average decline of 3.5 percent across advanced economies), the government had enough fiscal space to allow automatic stabilizers to operate fully and to implement stimulus measures without jeopardizing fiscal sustainability. The fiscal balance went from a surplus of 3.5 percent of GDP in 2007 to a relatively small deficit of 1 percent of GDP in 2009, most of which corresponded to the implementation of discretionary measures (including policies in immediate response to the crisis as well as the implementation of tax cuts adopted during earlier reforms).

The authorities' expansionary policy was not called into question by markets because of the low level of the deficit and the credibility of Sweden's

comprehensive fiscal policy framework—including a top-down budget process, a fiscal surplus target of 1 percent of GDP over the output cycle, a ceiling for central government expenditure set three years in advance, a balanced-budget requirement for local governments, and an independent fiscal council.

2. Central bank credibility allows monetary policy to be used aggressively.

During the crisis, the Riksbank lowered its target short-term interest rate nearly to zero and implemented sweeping liquidity measures, including long-term repurchase agreement operations and the provision of dollar liquidity. It had the flexibility to move aggressively in large part because of strong performance under its inflation-targeting regime.

3. A flexible exchange rate can help absorb the shock.

During the crisis, the krona fell in value against both the dollar and the euro as investors flocked to reserve currencies. It depreciated by 15 percent in real effective terms from mid-2008 to early 2009, supporting net exports and helping prop up economic activity.

4. Decisive action to ensure financial sector soundness is crucial.

Swedish banks were badly hurt by the financial crisis, despite their negligible exposure to U.S. sub-prime assets. Bank profitability fell sharply in 2008–09, and two of the largest banks—both increasingly funded on wholesale markets and exposed to the Baltics—saw their loan losses spike and their share prices and ratings decline accordingly. The authorities took fast action to calm depositors and inter-bank markets, including a doubling and extension of the deposit guarantee and introduction of new bank recapitalization and debt guarantee schemes.

Box 3. Long-Run and Short-Run Determinants of Sovereign Bond Yields in Advanced Economies

What factors affect the interest rate that governments pay to borrow in the long run? The economics literature suggests that borrowing costs depend on the fundamental conditions in the economy, and especially the fiscal accounts. For example, as government debt rises, sovereign bond yields should go up in recognition of the higher risk (default, monetization-driven depreciation and inflation) carried by investors holding government securities.

The long-run relationship between sovereign bond yields and their macroeconomic fundamentals can break down in the short run, especially during periods of financial stress. For example, despite the piling up of general government debt in the United States in the aftermath of the global financial crisis, U.S. bond yields have been trending downward. Conversely, despite a relatively lower initial level of general government debt, sovereign borrowing costs in some euro area countries such as Spain have persistently exceeded those of more highly indebted countries such as the United Kingdom.

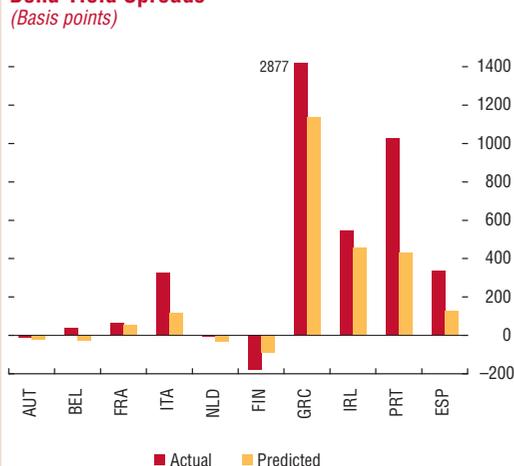
This behavior suggests the need to distinguish between long-run and short-run determinants of borrowing costs. Against this backdrop, a panel cointegration model was used to separate long-run from short-run determinants of bond yields in 22 advanced economies over the period 1980–2010 (Poghosyan, 2012). In contrast with the specifications used in most existing studies, this approach allows long-term real (that is, inflation-adjusted) bond yields (r) to deviate temporarily from their long-run equilibrium levels; thus it can help assess the speed of adjustment (γ) to the long-run equilibrium when such a deviation occurs.

The estimated equation takes the form

$$\Delta r_{it} = \gamma_i (r_{it-1} - \alpha - \beta_1' LR_{it-1} - \beta_2' LR_{it-1} * D_{EA}) + \lambda_i' \Delta SR_{it} + \varepsilon_{it}$$

where i and t denote country and time and ε is an independent and identically distributed error term. The model includes only two long-run determinants (LR) of real bond yields: potential growth and the debt-to-GDP ratio. As detailed for example in Laubach (2009), the standard representative household model with utility maximization suggests that the equilibrium interest rate should be higher in countries where the

Figure 3.1. Selected Euro Area Economies: Predicted and Actual Long-Run Real Sovereign Bond Yield Spreads
(Basis points)



Sources: Bloomberg L.P.; Poghosyan (2012); and IMF staff estimates and projections.

Note: Average for first half of 2012, with respect to Germany. Ten-year bond yields are deflated using each country's 2012 GDP deflator.

steady-state rate of growth is faster.¹ Similarly, higher debt puts upward pressure on the interest rate (assuming no Ricardian equivalence) through its crowding-out effect on private investment (Engen and Hubbard, 2004) and through the higher country risk premium (Manasse, Roubini, and Schimmelfennig, 2003). To account for interest rate convergence within the euro area following the introduction of the common currency, a dummy variable (D_{EA} , which takes the value of 1 during the period 1999–2010 for euro area countries) is interacted with long-run determinants.

Up to five short-term determinants (ΔSR) are also included: changes in the debt ratio, changes in the real money market interest rate (monetary policy effect), changes in inflation (nominal shocks), changes in the primary balance ratio (short-term fiscal policy), and changes in the growth rate (cyclical fluctuations in the real economy). This set of short-run factors is not exhaustive. Other short-run factors, such as feedback effects between banks and sovereigns, contingent liabilities of the public sector, market expectations about the economic and fiscal

¹Outside of the steady state, the equilibrium interest would vary according to the source of higher growth.

Box 3 (concluded)

outlook, and external capital flows, may also play an important role, especially in periods of financial stress, but are not included in the present analysis due to data limitations (see the October 2012 *Global Financial Stability Report* [IMF, 2012c] for the analysis of some of these short-term factors in a smaller sample). To ensure robust results, the model is estimated for subsamples of countries and time periods.

As expected, long-run real bond yields are found to be positively associated with potential growth and the debt-to-GDP ratio. A 1 percentage point increase in potential growth leads to a long-run increase of 30–50 basis points in real bond yields. Similarly, a 1 percentage point increase in the debt-to-GDP ratio leads to a 2–3 basis point increase in real bond yields, which is the lower end of the range of estimates found in previous country-specific and panel data studies (Baldacci and Kumar, 2010). Statistical tests provide support for the hypothesis of poolability of long-run coefficient estimates (α , β_1 , and β_2), suggesting that the estimated long-run association between bond yields, potential growth, and the debt ratio is common to all advanced economies in the sample. The results also suggest that in the short run, changes in real bond yields deviate from their long-run equilibrium in response to changes in the debt ratio (positive effect), real money market rates (positive effect), and inflation (negative effect). Changes in the growth rate (negative effect) and the primary balance ratio (negative effect) have weaker impacts. On average, 30–40

percent of the deviation from the long-run equilibrium is corrected within one year.

When applied to the current period, the model suggests that in many countries in the euro periphery, bond yield spreads (relative to Germany) in the first half of 2012 exceeded the equilibrium value associated with long-run and short-run fundamentals. The opposite picture emerges in the case of several core euro area countries (for example, Finland), where safe-haven effects result in spreads undershooting their equilibrium value. All in all, the model suggests that, in many members of the euro area, current sovereign borrowing costs deviate from the equilibrium level defined by macroeconomic fundamentals, in some cases substantially so.

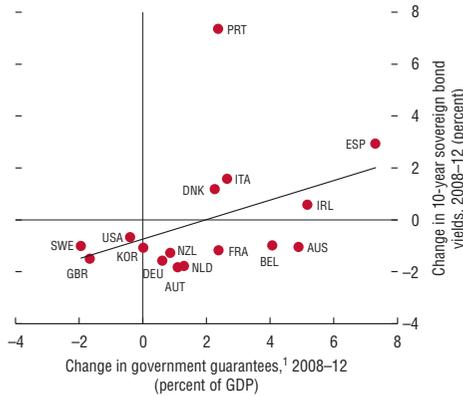
When interpreting these results, one should keep in mind that the analysis does not account for some factors that likely contributed to the temporary deviation of sovereign borrowing costs from their long-run equilibrium level in the aftermath of the crisis. These include, for example, uncertainties related to the feedback effects between banks and sovereigns and the contingent liabilities of the public sector. In addition, market overreaction should not be interpreted as evidence against the effectiveness of fiscal adjustment to reduce borrowing costs. A steady pace of fiscal adjustment remains imperative for anchoring lower borrowing costs in the long run, while short-run departures of borrowing cost from the long-run equilibrium should be addressed through complementary policies aimed at reducing financial stress and market uncertainty.

Box 4. Financial Sector Support

Sovereign stress in the euro area has grown in recent months along with rising concerns about the health of banking systems, particularly those in Spain and Cyprus. As investors perceived a transfer of credit risk from the banking sector to the government, they pushed up sovereign yields accordingly (Figure 4.1). Although new measures have been limited since the April 2012 *Fiscal Monitor* (Table 4.1), further fiscal outlays are expected; the main backstops will be the European Financial Stability Facility (EFSF) and its successor, the European stabilization mechanism (ESM). Recent developments related to the interaction of bank and sovereign stress in Cyprus, Greece, Ireland, and Spain are as follows:

- *Cyprus*. Cyprus Popular Bank received a capital injection amounting to 10 percent of GDP in June, partly to cover losses from the write-down on its holdings of Greek sovereign bonds. Bank of Cyprus has requested government support equal to 2¾ percent of GDP.
- *Greece*. Total bank recapitalization and resolution costs, including the capital needs arising from the write-down of the country’s sovereign debt, are estimated at 25 percent of GDP (IMF, 2012d). So far, the national support fund for Greek banks (the Hellenic Financial Stability Fund) has paid a capital advance to banks amounting to 9 percent of GDP via EFSF bonds.

Figure 4.1. Sovereign-Financial Linkages



Sources: Bloomberg L.P.; Dealogic; national authorities; and IMF staff estimates.
¹ Outstanding guaranteed bonds corresponding to bonds issued by private and public banks and financial institutions and carrying state guarantees. Short-term debt is not included.

Table 4.1. Selected Advanced Economies: Financial Sector Support

(Percent of 2011 GDP, except where otherwise indicated)¹

	Impact on gross public debt and other support	Recovery	Impact on gross public debt and other support after recovery
Belgium	7.0	0.6	6.3
Cyprus	10.1	0.0	10.1
Germany ²	12.2	1.5	10.7
Greece	14.8	3.9	11.0
Ireland ³	41.6	3.5	38.0
Netherlands	14.1	9.3	4.8
Spain ⁴	4.1	2.7	1.4
United Kingdom	6.8	1.4	5.4
United States	5.3	2.3	3.0
Average	7.2	2.4	4.9
In \$US billions	1,758	580	1,178

Sources: National authorities; and IMF staff estimates.

Note: Fiscal outlays of the central government, except in the cases of Germany and Belgium, for which financial sector support by subnational governments is also included.

¹ Cumulative since the beginning of the crisis—latest available data, ranging between end-December 2011 and February 2012.

² Support includes here the estimated impact on public debt of liabilities transferred to newly created government sector entities (10¼ percent of GDP), taking into account operations from the central and subnational governments. As public debt is a gross concept, this neglects the simultaneous increase in government assets. With this effect taken into account, the net debt effect amounted to just 1.6 percent of GDP, which was recorded as deficit. The European Commission has assessed the aid element of these transfers at about 0.8 percent of GDP.

³ The impact of the direct support measures is mainly on net debt as significant recapitalization expenses were met from public assets. Direct support does not include asset purchases by the National Asset Management Agency (NAMA), as these are not financed directly through the general government but with government-guaranteed bonds.

⁴ Direct support includes total capital injections by the Fondo de Reestructuración Ordenada Bancaria (FROB) and liquidity support.

- *Ireland*. The government completed the capitalization of the Permanent TSB bank through the purchase of Irish Life Group for 0.8 percent of GDP (€1.3 billion).
- *Spain*. New disbursements have been limited, but fiscal costs are expected to rise in the context of the restructuring of the banking system. For example, the Spanish Deposit Guarantee Fund (Fondo de Garantía de Depósitos de Entidades de Crédito, or FGD) and Fund for Orderly Bank Restructuring (Fondo de Reestructuración Ordenada Bancaria, or FROB) granted various support measures (including capital injection) amounting to 2½ percent of GDP to facilitate the purchase of Banco Caja

Box 4 (concluded)

de Ahorros del Mediterraneo (CAM) by Banco Sabadell. In addition, Bankia/Banco Financiero y de Ahorros (BFA) announced that it will request 1¾ percent of GDP from the FROB for the recapitalization of the group, of which 0.4 percent of GDP has already been disbursed.

The final capital support provided to Bankia/BFA will depend on stress test results. To cope with the financing needs that may result from the ongoing restructuring, the FROB will be able to borrow up to 9 percent of GDP from the EFSE.

Box 5. Do Pensioners Get Special Treatment on Taxes?

On average, taxing income from public pensions generates revenues amounting to about 1 percent of GDP in advanced and 0.2 percent of GDP in emerging market economies (Statistical Tables 15a and 15b).¹ With income taxes netted out, spending on public pensions declines from 9.1 to 8.0 percent of GDP in advanced economies and from 6.3 percent to 6.1 percent of GDP in emerging markets, though the ranking of countries is similar whether one looks at gross or net spending.

In most countries, income from public pensions receives favorable tax treatment.² Typically, public pension income benefits from concessions, often in addition to the exemptions and deductions available for other forms of income (for example, pension income of less than 30 percent of the average wage is exempt in Belgium and Norway). Some countries have special deductions based on age for all sources of income (for example, in Slovenia, Spain, and the United Kingdom, for those older than age 65). In all, only nine advanced and emerging

market economies (Austria, China, Chile, Denmark, France, Iceland, New Zealand, Poland, and Sweden) treat public pension income like any other form of income, and some (notably, several emerging market economies) fully exempt public pension income from taxation.

When considering public pension reforms, countries can review special provisions for pension income. First, reducing these concessions could increase horizontal equity: currently, in many countries pensioners pay lower income taxes than workers with identical gross incomes. Second, taxing public pensions could have a favorable effect on income distribution, particularly in emerging market economies where public pensions are usually received by a small share of households with relatively high lifetime incomes. For example, Moller (2012) shows that treating pensions like other forms of income in Colombia would reduce the Gini coefficient by 0.20 percentage points. Third, by favoring public pensions, pension income concessions might introduce disincentives for private retirement savings. Finally, taxing public pension income like other forms of income could generate fiscal savings in a more progressive way than would across-the-board pension cuts. Taxing public pensions, however, could reduce incentives to contribute and affect intertemporal efficiency by changing the balance between current and future consumption.

¹Based on the European Commission's *2012 Ageing Report* (European Commission Directorate-General for Economic and Financial Affairs, 2012a) (which reports gross and net spending for several European economies) and the Organisation for Economic Co-operation and Development's *Pension at a Glance 2011* (OECD, 2011) (which reports the tax rate for a pensioner who receives the pension of an average earner).

²In addition, in most countries, mandatory contributions to public pensions are income tax deductible.

Box 6. The “Two-Pack”: Further Reforms to Fiscal Governance in the Euro Area

The European Parliament and the European Council have begun discussing two new regulations—the “two-pack”—proposed by the European Commission and expected to be legislated by year end. The proposed reforms aim at tackling remaining weaknesses in budget surveillance and, in combination with the “six-pack” and the Fiscal Compact, improving fiscal discipline at the national level (see European Commission Directorate-General for Economic and Financial Affairs, 2012b).¹ The objectives of the Commission proposal are twofold: (1) improving coordination and setting common fiscal principles among euro area states and (2) strengthening the surveillance of EU member states facing heightened financial stability risks. The main proposals to meet these objectives are as follows:

Improving coordination and setting common fiscal principles in the euro area:

- Set a common timeline for the preparation of budgets in euro area states. National medium-term fiscal frameworks are to be prepared by April 15 of each year, draft budgets by October 15, and budget laws by December 31. The common deadlines are to facilitate a coordinated assessment of budgetary policies across the area. In case of serious noncompliance with the obligations of the Stability and Growth Pact, the

European Commission would be able to request a revision of a draft budget.

- Require that budgeting use independent macroeconomic forecasts and that independent national fiscal bodies monitor compliance with national fiscal rules. Monitoring would address the temptation to adopt overoptimistic budgets and would raise the reputational costs for noncompliance with national rules.
- Enhance reporting requirements for countries subject to the excessive deficit procedure. Require progress data during the budget year on execution and fiscal risks, including contingent liabilities.

Strengthening surveillance of EU member states facing heightened financial stability risks:

- Tighten monitoring rules for EU member states that are exposed to financial instability or that receive financial assistance. The supervision would extend beyond fiscal data to encompass the financial sector; for example, the Commission could request stress tests for the banking sector.

The European Parliament sees the two-pack as an opportunity to increase fiscal integration (European Parliament, 2012). In line with that goal, the Parliament itself had suggested coordinating debt issuance by pooling some debt of euro area states (debt that exceeds 60 percent of national GDP) in a European debt redemption fund. It had also proposed legal protection for countries on the verge of default. However, these proposals are currently not widely supported in the Council, and it remains to be seen if and how they will be reflected in regulations.

¹Earlier reforms introduced, for example, requirements for new numerical rules and stronger enforcement procedures (see Box 5 in the April 2012 *Fiscal Monitor*).

Box 7. General Government Nonfinancial Assets: What Do We Know?

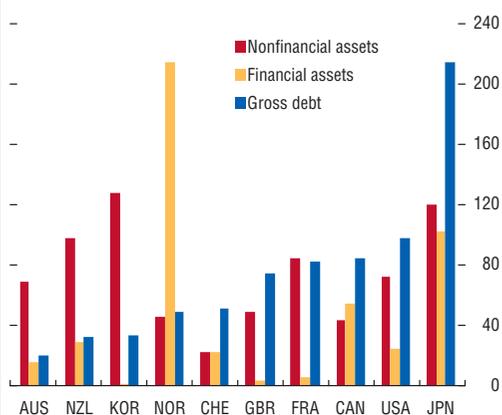
Recognizing that gross public debt ratios may overstate risks to fiscal sustainability, many countries report data on net debt, which subtracts from government gross debt the value of any *financial* assets that could be liquidated, at least in principle, to reduce gross debt, or whose yield could be used to service gross debt (see Statistical Tables 4 and 8 in the April 2012 *Fiscal Monitor*). Privatization of financial assets has indeed yielded substantial proceeds in many countries (see the September 2011 *Fiscal Monitor*). However, governments can draw on other types of assets as well, and expanding balance sheet coverage to include nonfinancial assets would provide an even more complete view of the potential room to reduce gross debt via asset sales.

Nonfinancial assets are stores of value that are used in the production of goods and services or that provide property income (European Commission, IMF, OECD, UN, and World Bank, 2009). They are generally divided into produced assets (mostly inventories, valuables, and fixed assets such as buildings) and nonproduced tangible (such as land and subsoil resources) and nontangible (such as leases and licenses) assets.¹ Where the two main subcategories of nonfinancial assets are measured, produced assets—mostly buildings and structures—account for more than 70 percent of nonfinancial assets, and nonproduced assets consist almost entirely of land.

However, there are a number of factors that complicate the inclusion of nonfinancial assets in the calculation of net debt ratios. As these assets are not frequently traded, they may be difficult to value accurately and to dispose of. Also, the sale of such assets may entail future revenue losses (if the

¹Tangible assets are also defined as naturally occurring, and nontangible assets as constructs of society (*Government Finance Statistics Manual 2001*).

Figure 7.1. Key Indicators of the General Government Balance Sheet, 2010
(Percent of GDP)



Sources: Eurostat; Organisation for Economic Co-operation and Development; IMF, *Government Finance Statistics*; and IMF staff estimates and projections.

Note: Data for Korea and Switzerland are for 2009.

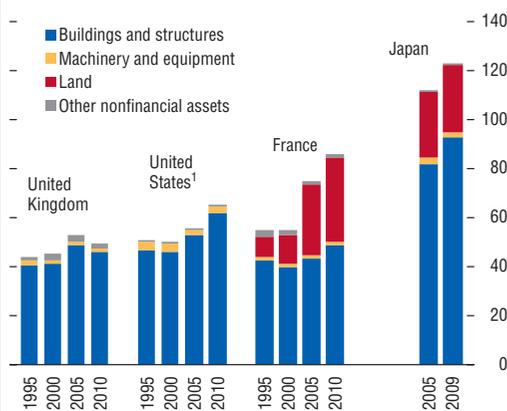
assets are a source of income) or higher spending (for example, if government buildings are sold and alternative space must be leased). Finally, nonfinancial assets held by governments are not well documented. Available data cover about 35 countries and encompass only a few categories, usually fixed assets (see Statistical Table 14). Cross-country comparisons are hampered by variations in definitions and valuation methods.

Where data are available, they show that nonfinancial assets are relatively large and have grown over time, with potentially important implications for thinking about sovereign creditworthiness. In most countries, nonfinancial assets on the general government balance sheet exceed financial assets on average by a ratio of 1.4 to 1 (Figure 7.1). If nonfinancial

Box 7 (concluded)

assets were included on the balance sheet, the net worth of these countries would be positive, ranging from 7.5 percent of GDP in Japan to 205 percent in Norway (accounting only for general government debt and not considering guarantees or contingent liabilities). Over time, nonfinancial assets held by the general government have increased relative to GDP in France, Japan, the United Kingdom, and the United States (the countries with the longest time series). In France, they rose from about 55 percent of GDP in 1995 to 86 percent in 2010, mostly because of a tripling in the value of land over that period to 34 percent of GDP (Figure 7.2). In Japan and in the United States, the worth of fixed assets (mostly buildings and structures) has also been on the rise. In the United Kingdom, the increase in the stock of buildings and structures during the early 2000s has reversed in the aftermath of the crisis.

Figure 7.2. Nonfinancial Assets, 1995–2010
(Percent of GDP)



Sources: Organisation for Economic Co-operation and Development; and IMF staff estimates and projections.

¹Data for the United States include fixed assets only.

Box 8. Ireland: The Impact of Crisis and Fiscal Policies on Inequality

The magnitude of the economic slowdown in Ireland during the crisis inevitably worsened the country's poverty and inequality, if only slightly. The ratio of net disposable income in the top quintile to that in the bottom quintile rose from 4.4 to 5.3 between 2008 and 2010 (a little above the 2010 EU average of 5.0). In the early stage of the financial crisis, inequality in Ireland fell as upper income groups suffered major income losses. However, the impact quickly spilled over to the middle income group, with its large share of construction workers who lost their jobs.

Ireland's strong social support system has cushioned the impact of the crisis on its at-risk-of-poverty indicators compared to the rest of Europe. Ireland's at-risk-of-poverty threshold was above the EU average (Figure 8.1, left panel) in both 2005 and

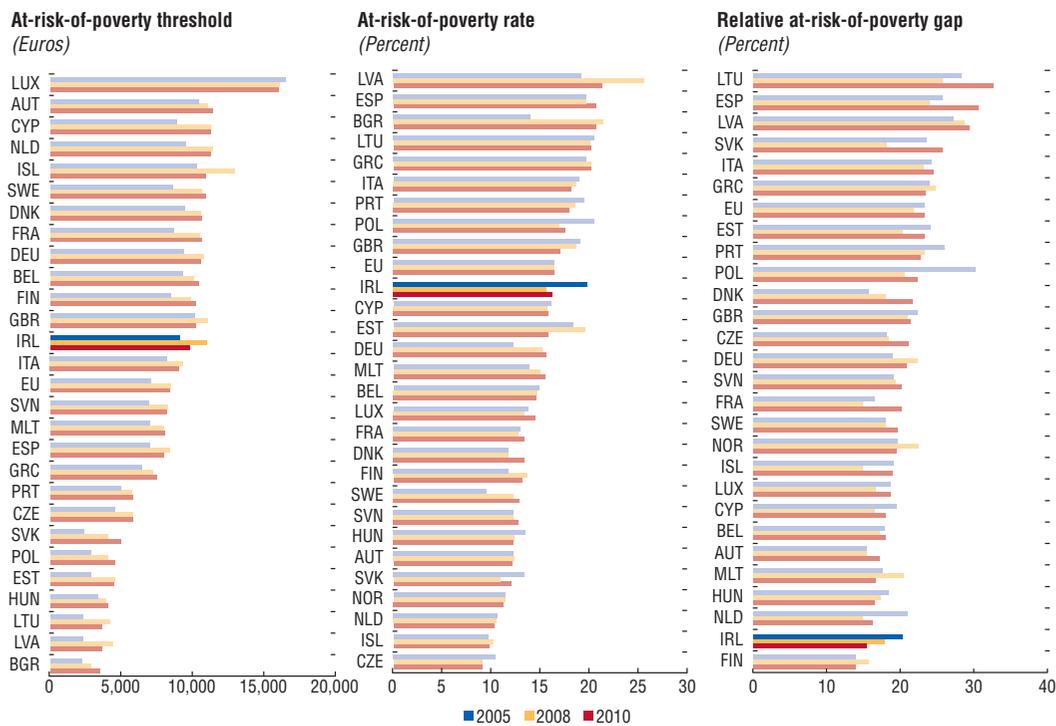
2010;¹ the share of the population below this threshold has fallen and is now less than the EU average (center panel). Moreover, Ireland's 2010 at-risk-of-poverty gap² is the second lowest in Europe (right panel).

Although some recent data have raised concerns about rising inequality in Ireland, budget consolida-

¹The at-risk-of-poverty threshold is defined as 60 percent of median equivalized household disposable income. Equivalized household disposable income is the income of a household available for consumption expenditures or saving (that is, income after taxes and other deductions), divided by the number of equivalent household members; household members are made equivalent by weighting each according to his or her age using the Organisation for Economic Co-operation and Development's modified equivalence scale.

²The gap is defined as the difference (in percent) between the at-risk-of-poverty threshold and the median income of those below it.

Figure 8.1. Selected Indicators in Ireland and the European Union, 2005, 2008, 2010



Source: Eurostat.

Box 8 (concluded)

tion has had an overall progressive impact to date. The recent increase in income inequality indicators is in part related to sampling variations, and its policy implications are unclear. Studies have indicated that the cumulative budgetary consolidation over 2009–12 has been progressive, with the sole exception of the 2012 standard value-added tax rate increase (although the impact on income inequality of this measure is not clear cut either, as many essential items remained zero rated).

In any event, future budgetary measures will be crucial for the advancement of equity given the central role of tax and welfare policies for poverty outcomes. In assessing the equity implications of the budget, it is important to look at the overall impact of budget policy; for example, revenues raised in a modestly regressive manner can be used to finance expenditure that is highly progressive, resulting in a net positive impact on low-income households.

Appendix 1. Distributional Consequences of Alternative Fiscal Consolidation Measures: Readings from the Data

The Great Recession of 2007–09 led to an unprecedented increase in public debt and raised serious, ongoing concerns about fiscal sustainability.³³ Against this backdrop, many governments have been making substantial fiscal adjustments to reduce their ratios of debt to GDP. It is generally recognized that consolidation is bad for growth in the short run. But do different forms of fiscal consolidation affect income inequality as opposed to income levels?³⁴ Surprisingly, there has been little systematic analysis of this question.³⁵ This appendix analyzes the effects of fiscal policies on income inequality in a panel of advanced and emerging market economies over the past three decades. Preventing a significant worsening of the income distribution during the adjustment phase is critical to the sustainability of deficit reduction efforts, as a consolidation that is perceived as being fundamentally unfair will be difficult to maintain.

During the two years following the Great Recession, there was little change in disposable income distribution in most advanced economies as a result of government support via tax and benefits, with real income levels declining throughout the income distribution.³⁶ However, looking forward, the results—based on econometric analysis and case studies—suggest that shifts in income distribution will likely materialize. Declines in employment associated with the recession will be the major driver of these shifts, but the composition of fiscal adjustment also matters: progressive taxation and targeted social benefits and subsidies introduced in the context of a

broader decline in spending can help offset some of the negative distributional impact of deficit reduction. In addition, fiscal policy can address inequality and growth by promoting education and training among low- and middle-income workers.

Trends in income distribution and fiscal policy

Income inequality has increased since the 1980s in most advanced and emerging market economies, a trend reflecting an array of factors including skill-biased technological progress, technology diffusion, market reforms, and globalization. Inequality in disposable income (income after taxes and transfers) exhibits a similar upward trend, but there are wide differences across countries and regions, largely due to variations in income tax systems and spending policies (Figure A1.1).³⁷

In advanced economies, redistributive fiscal policy has historically played a significant role in reducing inequality in market incomes. However, reforms since the 1980s have typically contributed to increased income inequality by lessening the generosity of social benefits and the progressivity of income tax systems (Figure A1.2). In emerging markets, the redistributive impact of fiscal policy has historically been limited by weak taxation (large parts of the economy are outside the income tax system, and the efficiency of tax collection is relatively low) and poorly targeted social transfers. Social benefits and subsidies have increased in emerging market economies and low-income countries since the 1980s, but these economies also exhibit a declining ratio of direct to indirect taxes, a measure that provides a crude indication of declining tax progressivity. Overall, the data point to a strong negative association between social spending and income inequality and to a negative, albeit less clear cut, relationship between the ratio of direct to indirect taxes and inequality.

Fiscal consolidation, fiscal policy, and inequality

Based on annual panel data covering 48 advanced and emerging market economies during 1980–2010,

³⁷For a review of trends in income inequality and the evolution of fiscal policies, see Bastagli, Coody, and Gupta (2012) and Chu, Davoodi, and Gupta (2004).

³³This appendix is based on Bova and others (2012).

³⁴The distributional impact of failing to adjust is beyond the scope of this analysis. However, the impact of a delay in fiscal consolidation could be even worse if it results in an eventual debt crisis that forces a sudden, even greater fiscal adjustment, accompanied by a severe recession.

³⁵Notable exceptions are Agnello and Sousa (2012) for 18 OECD countries in 1978–2009 and Mulas-Granados (2005) for 15 EU countries in 1960–2000.

³⁶See Jenkins and others (2011).