

*Global prospects have improved again but the road to recovery in the advanced economies will remain bumpy. World output growth is forecast to reach 3¼ percent in 2013 and 4 percent in 2014 (Table 1.1). In the major advanced economies, activity is expected to gradually accelerate, following a weak start to 2013, with the United States in the lead. In emerging market and developing economies, activity has already picked up steam. Advanced economy policymakers have successfully defused two of the biggest threats to the global recovery, a breakup of the euro area and a sharp fiscal contraction in the United States caused by a plunge off the “fiscal cliff.” However, old dangers remain and new risks have come to the fore. In the short term, risks mainly relate to developments in the euro area, including uncertainty about the fallout from events in Cyprus and politics in Italy as well as vulnerabilities in the periphery. In the medium term, the key risks relate to adjustment fatigue, insufficient institutional reform, and prolonged stagnation in the euro area as well as high fiscal deficits and debt in the United States and Japan. In this setting, policymakers cannot afford to relax their efforts. In advanced economies, the right macroeconomic approach continues to be gradual but sustained fiscal adjustment, built on measures that limit damage to activity, and accommodative monetary policy aimed at supporting internal demand. The United States and Japan still need to devise and implement strong medium-term fiscal consolidation plans. The euro area needs to strengthen the Economic and Monetary Union (EMU). In emerging market and developing economies, some tightening of policies appears appropriate in the medium term. This tightening should begin with monetary policy and be supported with prudential measures as needed to rein in budding excesses in financial sectors. Eventually, policymakers should also return fiscal balances to their healthy pre-2008 levels, rebuilding ample room for policy maneuvering. Some will need to take significant action now; others will need only limited improvements in the medium term.*

## Activity Is Beginning to Recover after the Slowdown in 2012

Activity has stabilized in advanced economies and has picked up in emerging market and developing economies, supported by policies and renewed confidence. This pickup follows the slowdown in the first half of 2012, which was manifested in industrial production and global trade (Figure 1.1, panel 1). Investment in major economies also dipped, whereas consumption evolved broadly as expected—sluggishly in many advanced economies, hobbled by low employment rates (Figure 1.2, panels 3 and 4), and buoyantly in many emerging market and developing economies, where labor markets continue to perform well (Figure 1.1, panel 2).

Strong actions by European policymakers helped improve confidence and financial conditions. U.S. policymakers avoided the fiscal cliff but have failed to find durable solutions to other short-term fiscal risks. Japan adopted more expansionary macroeconomic policies in response to a larger-than-expected slowdown. In the meantime, policy easing in key emerging market economies has supported internal demand. Moreover, the production and consumption dynamics in many economies may have primed them for an inventory-led rebound (Figure 1.2, panel 5).

## Financial and Monetary Conditions Have Eased

Financial markets have led the reacceleration in activity. Since mid-2012, there has been a broad market rally. Policy rates have evolved broadly as expected, with a number of central banks in advanced and emerging market economies implementing modest rate cuts in response to the latest slowdown. Although markets may have moved ahead of the real economy, the April 2013 *Global Financial Stability Report* (GFSR) underscores that near-term financial stability risks have eased.

- Equity prices in advanced and emerging markets have risen by some 15 percent, and equity price

**Table 1.1. Overview of the World Economic Outlook Projections**  
(Percent change unless noted otherwise)

	Year over Year								
	2011	2012	Projections		Difference from January 2013 WEO Update		Q4 over Q4		
			2013	2014	2013	2014	Estimates	Projections	
							2012	2013	2014
<b>World Output<sup>1</sup></b>	<b>4.0</b>	<b>3.2</b>	<b>3.3</b>	<b>4.0</b>	<b>-0.2</b>	<b>0.0</b>	<b>2.7</b>	<b>3.6</b>	<b>4.0</b>
<b>Advanced Economies</b>	<b>1.6</b>	<b>1.2</b>	<b>1.2</b>	<b>2.2</b>	<b>-0.1</b>	<b>0.1</b>	<b>0.8</b>	<b>2.0</b>	<b>2.3</b>
United States	1.8	2.2	1.9	3.0	-0.2	-0.1	1.7	2.2	3.4
Euro Area	1.4	-0.6	-0.3	1.1	-0.2	0.0	-0.9	0.6	1.1
Germany	3.1	0.9	0.6	1.5	0.1	0.0	0.4	1.5	1.1
France	1.7	0.0	-0.1	0.9	-0.4	0.0	-0.3	0.4	1.0
Italy	0.4	-2.4	-1.5	0.5	-0.4	0.0	-2.8	-0.4	0.6
Spain	0.4	-1.4	-1.6	0.7	-0.1	-0.1	-1.9	-0.7	1.1
Japan	-0.6	2.0	1.6	1.4	0.4	0.7	0.4	3.8	-0.1
United Kingdom	0.9	0.2	0.7	1.5	-0.3	-0.3	0.3	1.1	1.5
Canada	2.6	1.8	1.5	2.4	-0.3	0.1	1.1	2.0	2.5
Other Advanced Economies <sup>2</sup>	3.3	1.8	2.5	3.4	-0.3	0.1	2.0	3.0	3.4
<b>Emerging Market and Developing Economies<sup>3</sup></b>	<b>6.4</b>	<b>5.1</b>	<b>5.3</b>	<b>5.7</b>	<b>-0.2</b>	<b>-0.1</b>	<b>5.2</b>	<b>5.7</b>	<b>5.9</b>
Central and Eastern Europe	5.2	1.6	2.2	2.8	-0.3	-0.4	1.4	3.1	2.4
Commonwealth of Independent States	4.8	3.4	3.4	4.0	-0.4	-0.1	1.5	4.1	3.4
Russia	4.3	3.4	3.4	3.8	-0.3	0.0	1.9	4.8	2.9
Excluding Russia	6.1	3.3	3.5	4.6	-0.8	-0.1	...	...	...
Developing Asia	8.1	6.6	7.1	7.3	0.0	-0.1	7.2	7.0	7.4
China	9.3	7.8	8.0	8.2	-0.1	-0.3	7.9	7.8	8.3
India	7.7	4.0	5.7	6.2	-0.2	-0.1	4.1	5.8	6.2
ASEAN-5 <sup>4</sup>	4.5	6.1	5.9	5.5	0.3	-0.2	9.0	5.3	5.5
Latin America and the Caribbean	4.6	3.0	3.4	3.9	-0.3	0.0	2.7	3.6	3.8
Brazil	2.7	0.9	3.0	4.0	-0.5	0.1	1.4	3.8	4.1
Mexico	3.9	3.9	3.4	3.4	-0.1	-0.1	3.3	4.0	3.0
Middle East, North Africa, Afghanistan, and Pakistan	3.9	4.7	3.1	3.7	-0.3	-0.1	...	...	...
Sub-Saharan Africa <sup>5</sup>	5.3	4.8	5.6	6.1	-0.2	0.4	...	...	...
South Africa	3.5	2.5	2.8	3.3	0.0	-0.8	2.3	3.4	3.2
<i>Memorandum</i>									
European Union	1.6	-0.2	0.0	1.3	-0.2	-0.1	-0.6	0.9	1.2
Middle East and North Africa	4.0	4.8	3.1	3.7	-0.3	-0.2	...	...	...
World Growth Based on Market Exchange Rates	2.9	2.5	2.6	3.4	-0.2	0.0	1.9	3.0	3.3
<b>World Trade Volume (goods and services)</b>	<b>6.0</b>	<b>2.5</b>	<b>3.6</b>	<b>5.3</b>	<b>-0.2</b>	<b>-0.1</b>	...	...	...
Imports									
Advanced Economies	4.7	1.0	2.2	4.1	0.0	0.0	...	...	...
Emerging Market and Developing Economies	8.6	4.9	6.2	7.3	-0.3	-0.4	...	...	...
Exports									
Advanced Economies	5.6	1.9	2.8	4.6	0.0	0.1	...	...	...
Emerging Market and Developing Economies	6.4	3.7	4.8	6.5	-0.8	-0.4	...	...	...
<b>Commodity Prices (U.S. dollars)</b>									
Oil <sup>6</sup>	31.6	1.0	-2.3	-4.9	2.8	-2.0	-1.2	-1.3	-4.7
Nonfuel (average based on world commodity export weights)	17.8	-9.8	-0.9	-4.3	2.2	-1.3	1.2	-3.3	-2.7
<b>Consumer Prices</b>									
Advanced Economies	2.7	2.0	1.7	2.0	0.1	0.2	1.8	1.7	2.1
Emerging Market and Developing Economies <sup>3</sup>	7.2	5.9	5.9	5.6	-0.1	0.1	4.9	5.3	5.2
<b>London Interbank Offered Rate (percent)<sup>7</sup></b>									
On U.S. Dollar Deposits	0.5	0.7	0.5	0.6	-0.1	0.0	...	...	...
On Euro Deposits	1.4	0.6	0.2	0.4	0.1	0.2	...	...	...
On Japanese Yen Deposits	0.3	0.3	0.2	0.2	0.0	0.0	...	...	...

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during February 11–March 11, 2013. When economies are not listed alphabetically, they are ordered on the basis of economic size. The aggregated quarterly data are seasonally adjusted.

<sup>1</sup>The quarterly estimates and projections account for 90 percent of the world purchasing-power-parity weights.

<sup>2</sup>Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

<sup>3</sup>The quarterly estimates and projections account for approximately 80 percent of the emerging market and developing economies.

<sup>4</sup>Indonesia, Malaysia, Philippines, Thailand, Vietnam.

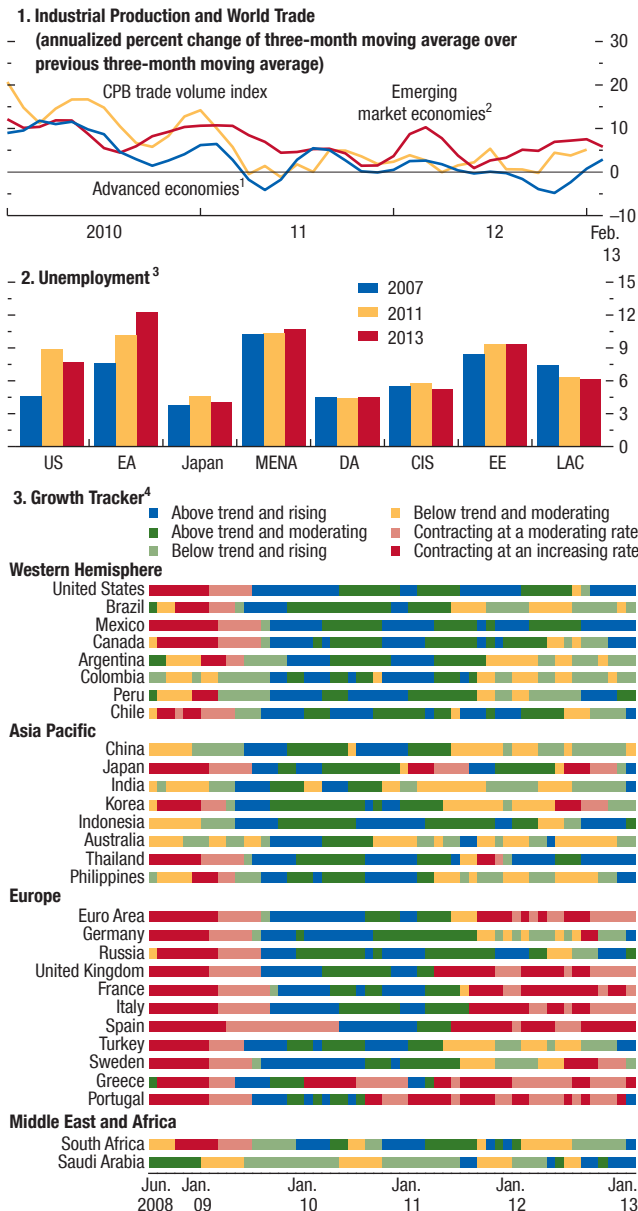
<sup>5</sup>Regional and global aggregates include South Sudan.

<sup>6</sup>Simple average of prices of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil. The average price of oil in U.S. dollars a barrel was \$105.01 in 2012; the assumed price based on futures markets is \$102.60 in 2013 and \$97.58 in 2014.

<sup>7</sup>Six-month rate for the United States and Japan. Three-month rate for the euro area.

**Figure 1.1. Global Indicators**

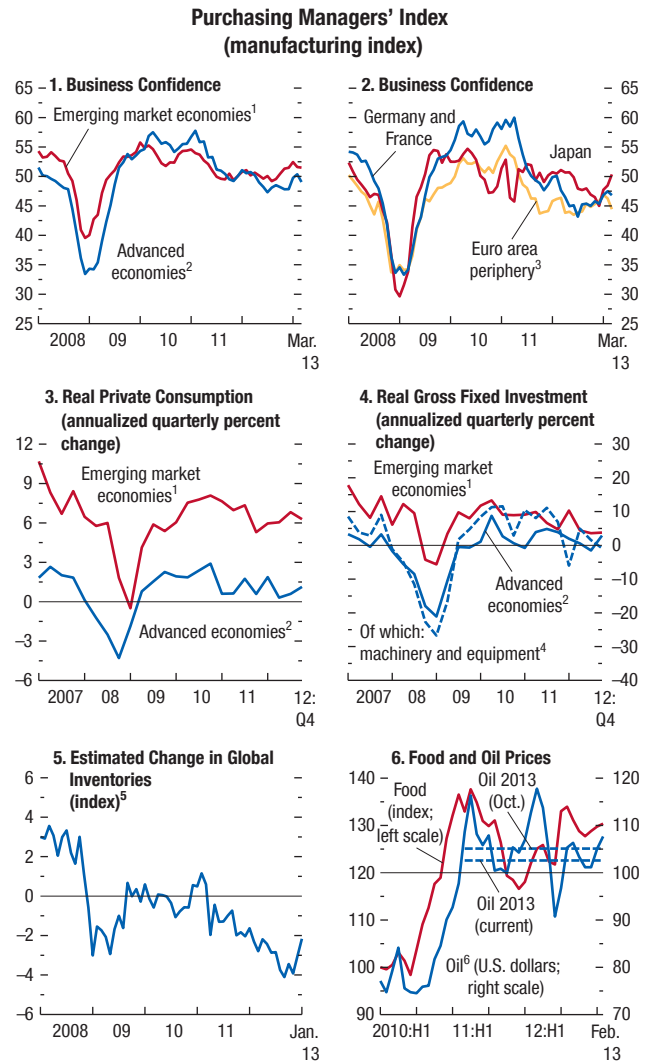
The global manufacturing and trade cycle has begun to reaccelerate, particularly in the emerging market economies. Conjunctural indicators suggest that many advanced European economies are lagging behind the global upturn. Unemployment will continue to increase in Europe and the Middle East and North Africa.



Sources: Haver Analytics; Netherlands Bureau for Economic Policy Analysis for CPB trade volume index; and IMF staff estimates.  
 Note: US = United States; EA = euro area; CIS = Commonwealth of Independent States; DA = developing Asia; EE = emerging Europe; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa.  
<sup>1</sup>Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong SAR, Israel, Japan, Korea, New Zealand, Norway, Singapore, Sweden, Switzerland, Taiwan Province of China, United Kingdom, United States.  
<sup>2</sup>Argentina, Brazil, Bulgaria, Chile, China, Colombia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, Venezuela.  
<sup>3</sup>Sub-Saharan Africa is omitted due to data limitations.  
<sup>4</sup>The Growth Tracker is described in Matheson (2011). Within regions, countries are listed by economic size. The colors indicate whether estimated monthly growth is positive or negative, higher or lower than estimated trend growth, and whether estimated growth has been rising or falling over the previous quarter. Trend growth is estimated using a Hodrick-Prescott filter and may differ from the IMF staff's estimates of potential growth, where these are available.

**Figure 1.2. Current and Forward-Looking Growth Indicators**

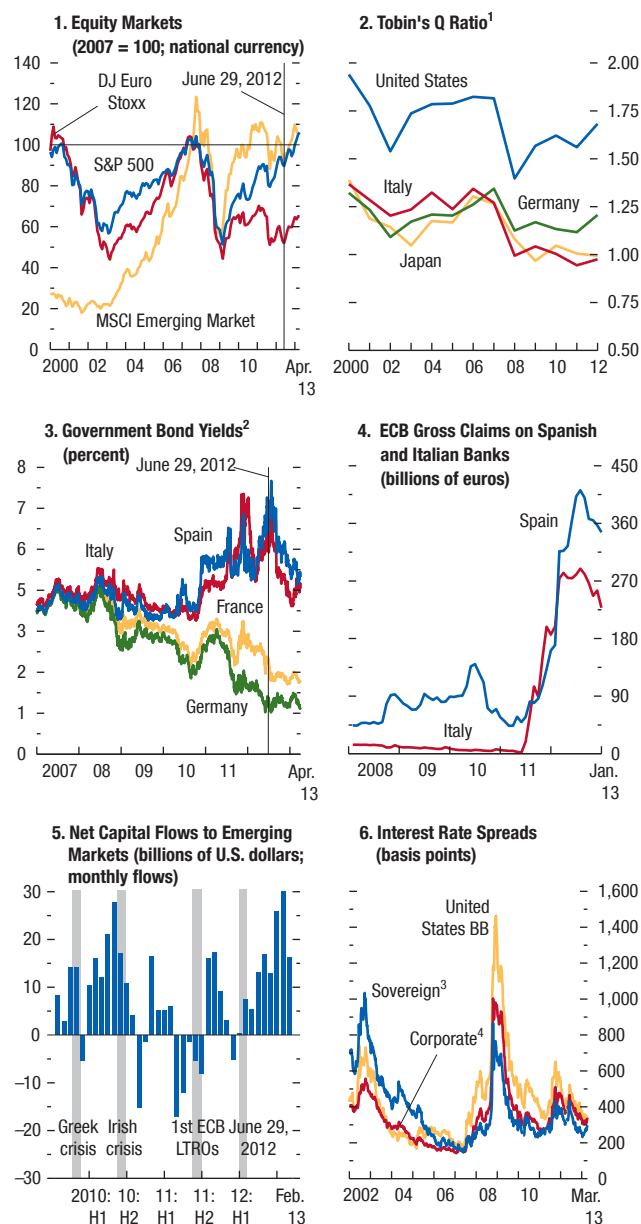
Indicators of manufacturing activity suggest that a reacceleration is well under way in emerging market economies but that activity in advanced economies is only beginning to stabilize, held back by major weakness in the euro area periphery and Japan. Consumption growth eased marginally during the latest slowdown. Amid contracting manufacturing output and trade, however, investment stalled. This may have come with a reduction in inventories, setting the stage for an inventory-led rebound.



Sources: Markit/Haver Analytics; and IMF staff calculations.  
 Note: Not all economies are included in the regional aggregations. For some economies, monthly data are interpolated from quarterly series.  
<sup>1</sup>Argentina, Brazil, Bulgaria, Chile, China, Colombia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, Venezuela.  
<sup>2</sup>Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong SAR, Israel, Japan, Korea, New Zealand, Norway, Singapore, Sweden, Switzerland, Taiwan Province of China, United Kingdom, United States.  
<sup>3</sup>Greece, Ireland, Italy, Spain.  
<sup>4</sup>Purchasing-power-parity-weighted averages of metal products and machinery for the euro area, plants and equipment for Japan, plants and machinery for the United Kingdom, and equipment and software for the United States.  
<sup>5</sup>Based on deviations from an estimated (cointegral) relationship between global industrial production and retail sales.  
<sup>6</sup>U.S. dollars a barrel: simple average of spot prices of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil. The dashed lines indicate projected oil prices in the October 2012 and current WEO reports.

**Figure 1.3. Financial Market Conditions**

Stronger policies in the major advanced economies have triggered a broad rally in financial markets. Since summer 2012, equity prices are up some 15 percent. Euro area periphery risk spreads are down more than expected, and Target 2 liabilities of Italy and Spain have decreased. Capital flows to emerging market economies have resumed, pushing down their risk spreads.



Sources: Bloomberg, L.P.; Capital Data; EPFR Global/Haver Analytics; national central banks; Worldscope; and IMF staff calculations.

Note: ECB = European Central Bank; LTROs = longer-term refinancing operations.

<sup>1</sup>Tobin (1969).

<sup>2</sup>Ten-year government bonds.

<sup>3</sup>JPMorgan EMBI Global Index spread.

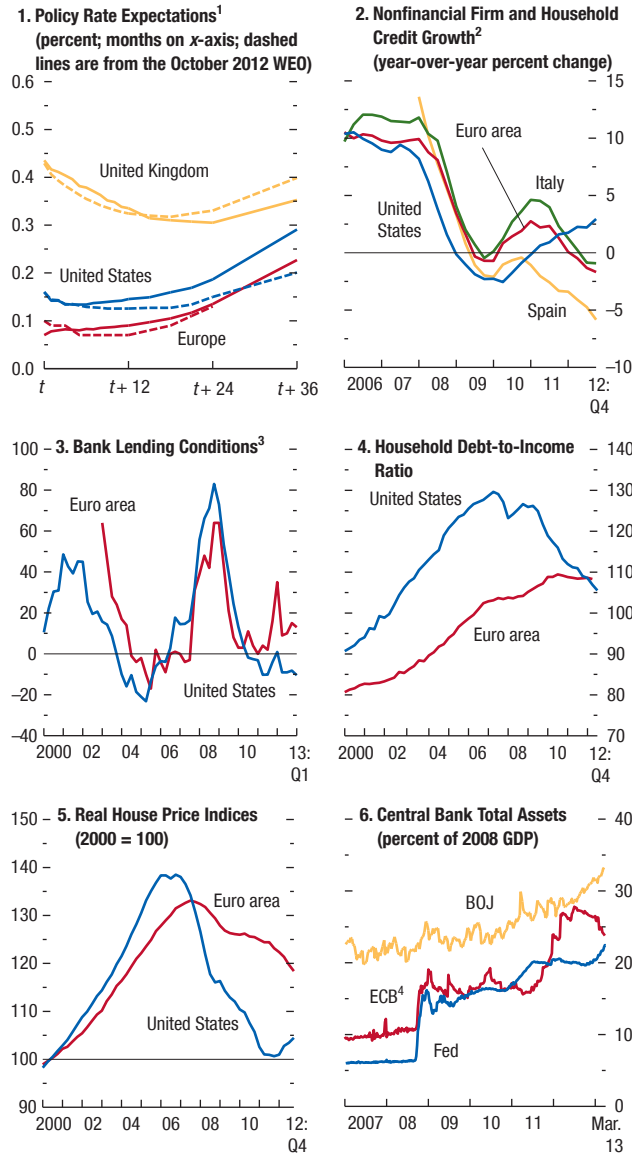
<sup>4</sup>JPMorgan CEMBI Broad Index spread.

volatility has fallen to pre-2008 levels (Figure 1.3, panel 1). But proxies for Tobin's Q ratio (Tobin, 1969) are still appreciably below precrisis levels (Figure 1.3, panel 2), consistent with equity investors' subdued views of the future. High-yield bond issuance is running well above precrisis levels in the United States, buttressed by record-low yields and tight bank lending conditions. This is not, however, translating into an investment boom.

- In the euro area, periphery sovereign spreads have dropped (Figure 1.3, panel 3). For the first time in a year, selected periphery economies have successfully placed large volumes of long-term syndicated sovereign bonds. But these improvements are fragile, as suggested by the increased volatility in periphery spreads in response to political uncertainty in Italy and the events in Cyprus.
- Risk spreads on emerging market sovereigns and corporations have declined with the resumption of capital inflows (Figure 1.3, panels 5 and 6). Bond and syndicated loan issuance has been strong. Furthermore, very low U.S. dollar and euro interest rates have prompted corporations to increase their issuance of foreign-currency-denominated debt. However, bank credit remains sluggish in many advanced economies, despite the rebound in the financial markets. Demand and supply forces are at work.
- In the United States, the rate of credit growth has been picking up gradually, and bank lending conditions have been easing slowly from very tight levels (Figure 1.4, panels 2 and 3). Together with lower market risk spreads, this has noticeably eased financial conditions (Figure 1.5, panel 1). This process is supported by recovering house prices, higher household net worth, and stronger bank balance sheets and profitability (Figure 1.4, panels 4 and 5). However, many middle-income households continue to face high debt burdens.
- In the euro area, sustained, positive feedback between activity and credit still seems a distant prospect. GFSR analysis suggests that bank deleveraging is proceeding in line with the "current policies" baseline anticipated in October 2012, a reflection of continued concern about capital and liquidity. Euro area credit continues to contract and lending conditions to tighten, reflecting mainly conditions in the periphery economies but also the poor macroeconomic outlook for the region as a whole. Companies in the core face an uncertain environment and low

**Figure 1.4. Monetary Conditions and Bank Lending**

Monetary policy rates are forecast to remain very low over the next three years. In the euro area, credit is contracting, reflecting mainly conditions in the periphery, and lending conditions continue to tighten. By contrast, in the United States credit growth is picking up again, and lending conditions have begun to ease, and this is being helped by recovering house prices and improved household balance sheets.

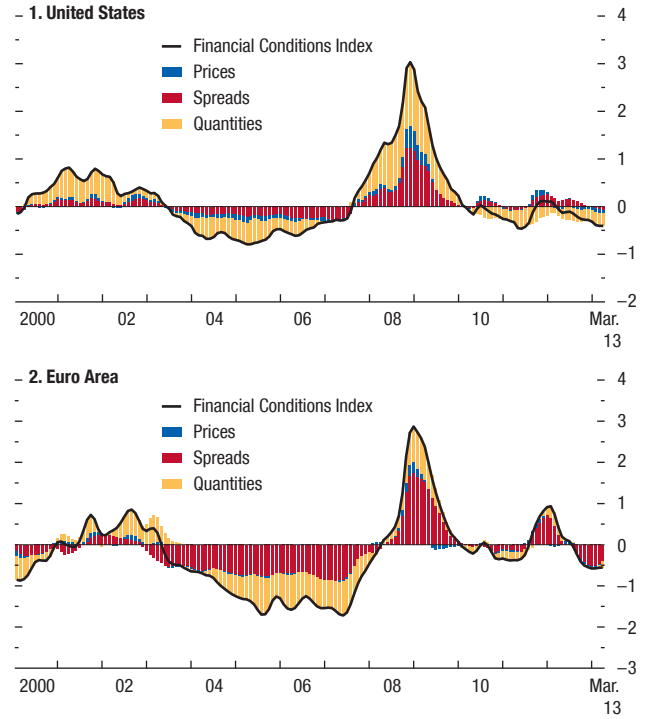


Sources: Bank of America/Merrill Lynch; Bank of Italy; Bank of Spain; Bloomberg, L.P.; Haver Analytics; Organization for Economic Cooperation and Development; and IMF staff calculations.

Note: BOJ = Bank of Japan; ECB = European Central Bank; Fed = Federal Reserve.  
<sup>1</sup>Expectations are based on the federal funds rate for the United States, the sterling overnight interbank average rate for the United Kingdom, and the euro interbank offered forward rates for Europe; updated April 2, 2013.  
<sup>2</sup>Flow of funds data are used for the euro area, Spain, and the United States. Italian bank loans to Italian residents are corrected for securitizations.  
<sup>3</sup>Percent of respondents describing lending standards as tightening “considerably” or “somewhat” minus those indicating standards as easing “considerably” or “somewhat” over the previous three months. Survey of changes to credit standards for loans or lines of credit to firms for the euro area; average of surveys on changes in credit standards for commercial and industrial and commercial real estate lending for the United States.  
<sup>4</sup>ECB calculations are based on the Eurosystem’s weekly financial statement.

**Figure 1.5. Financial Conditions Index**  
(Positive = tightening; standard deviations from average)

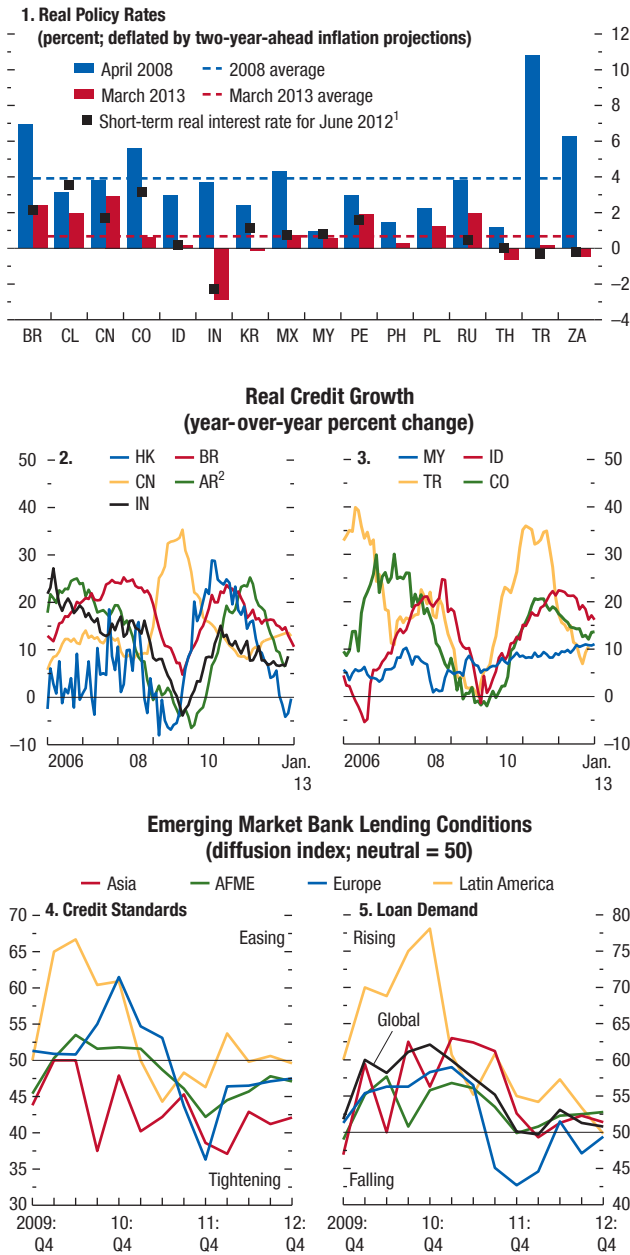
Financial conditions tightened sharply toward the end of 2011 as the economic outlook deteriorated and tensions rose in the euro area. More recently, market confidence has been bolstered by improved growth prospects and stronger policy actions. Risk spreads have narrowed as a result. Financial conditions are expected to continue easing as global growth continues to gain traction.



Source: IMF staff calculations.

**Figure 1.6. Monetary Policies and Credit in Emerging Market Economies**

In emerging market economies, real policy rates have fallen during the past six months. In addition, the pace of real credit growth has dropped, consistent with easing loan demand. However, in many economies it remains at a level that is generally considered high. Loan demand has been softening, except in emerging Europe, which is recovering from a credit bust. Credit standards have been in tightening territory since 2011, but less so recently.



Sources: Haver Analytics; IIF Emerging Markets Bank Lending Survey; IMF, *International Financial Statistics*; and IMF staff calculations.  
 Note: AR = Argentina; BR = Brazil; CL = Chile; CN = China; CO = Colombia; HK = Hong Kong SAR; ID = Indonesia; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = Philippines; PL = Poland; RU = Russia; TH = Thailand; TR = Turkey; ZA = South Africa; AFME = Africa and Middle East.  
<sup>1</sup>Bank of Indonesia rate for Indonesia; the Central Bank of the Republic of Turkey's effective marginal funding cost estimated by the IMF staff for Turkey.  
<sup>2</sup>Nominal credit is deflated using the IMF staff's estimate of average provincial inflation.

demand; in the periphery, companies and households continue to struggle against weak balance sheets, or weak income prospects, or both. Looking ahead, continued low policy interest rates are forecast for the major advanced economies (Figure 1.4, panel 1) and are expected to translate slowly into more dynamic bank lending—provided financial stability risks continue to abate. This process will take much longer in the euro area than in the United States. In Japan, the new quantitative and qualitative easing framework of monetary policy adds substantial further monetary stimulus and should help accelerate the achievement of the Bank of Japan's new 2 percent inflation target.

In many emerging market and developing economies, credit and activity are propelling each other. In some, policy rate hikes and prudential measures reduced the very high pace of credit expansion (Figure 1.6, panels 2 and 3). But in many Asian and Latin American economies, credit expansion has continued at an elevated pace and credit-to-GDP ratios have continued to move up.

With a few exceptions, central banks have held policy rates constant or cut them modestly in response to the 2012 slowdown. Real policy rates thus remain well below pre-2008 levels (Figure 1.6, panel 1). In the meantime, however, activity and capital inflows are reaccelerating, which will likely boost bank funding and ease credit conditions (Figure 1.6, panels 4 and 5). Monetary and regulatory authorities must watch for risks to financial stability that may ensue.

**The Fiscal Policy Stance Will Stay Broadly Unchanged**

As discussed in the April 2013 *Fiscal Monitor*, policy has evolved broadly as expected in 2012. In advanced economies, general government deficits as a percent of GDP were brought down below 6 percent in 2012, despite weak activity (Figure 1.7, panel 2). However, debt-to-GDP ratios continued to rise (Figure 1.7, panel 3). In emerging market and developing economies, deficit ratios rose modestly in response to weaker activity, while debt ratios fell.

In 2013, the fiscal withdrawal in advanced economies will be some 1 percent of GDP (Figure 1.7, panel 1). The key fiscal drivers of the *World Economic Outlook* (WEO) projections are the following:

- In Japan, fiscal policy was set to tighten as a result of the unwinding of reconstruction-related spend-

ing. However, the passage of a new stimulus equivalent to about 1½ percent of GDP during 2013–14 eases the fiscal stance moderately this year. The deficit will remain close to 10 percent of GDP for the fifth straight year, but is expected to improve markedly in 2014 with the unwinding of the stimulus and reconstruction spending and the planned consumption tax increase in April to 8 percent from 5 percent. What is worrisome is that the debt-to-GDP ratio will continue to rise, reaching 255 percent of GDP in 2018.

- U.S. fiscal policy is assumed to tighten by about 1¾ percent of GDP, which is ½ percentage point of GDP more than in 2012, largely reflecting the budget sequester. The deficit will then still exceed 5 percent of GDP in 2014, and the public debt ratio will stand at about 110 percent. The forecast assumes that the debt ceiling is raised and that the budget sequester is replaced at the end of the current fiscal year with back-loaded measures.
- In the euro area, deficits have already been reduced much more than in Japan or the United States, and the pace of consolidation will drop to ¾ percentage point of GDP in 2013, from a little less than 1½ percentage points in 2012. In particular, Germany will shift from structural tightening to slight loosening, and Italy will tighten by about 1 percent of GDP, down from 2¼ percent. Periphery economies continue to face a dangerous combination of low growth, high interest rates, high deficits, and high debt. In the United Kingdom, fiscal consolidation is now forecast to be slower than was anticipated previously.

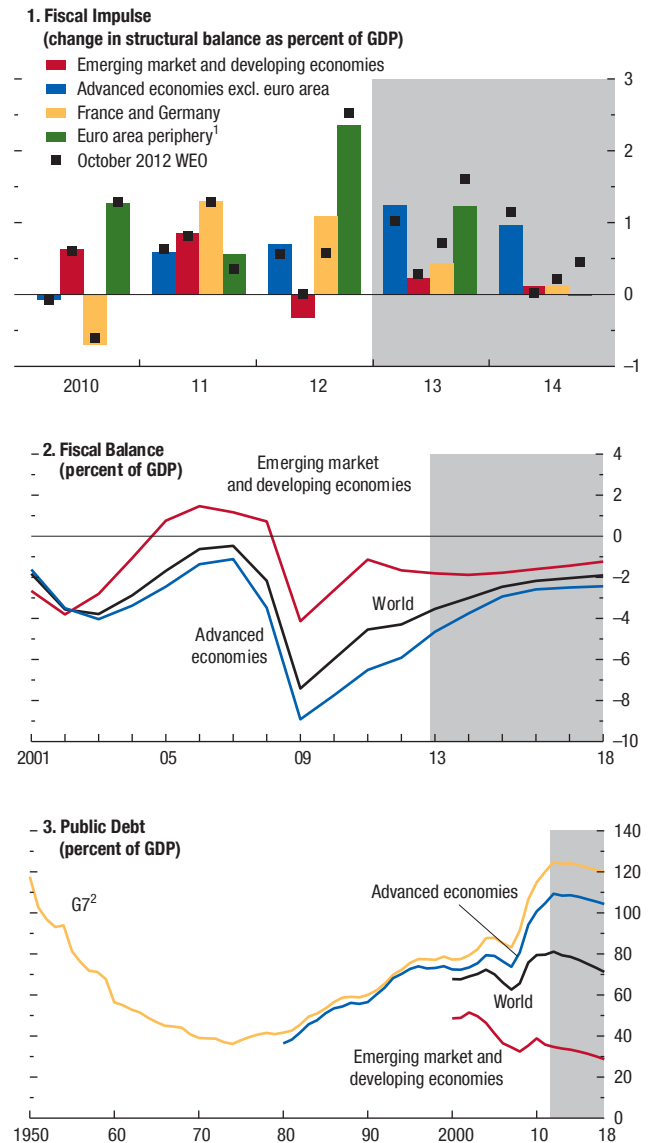
In emerging market and developing economies, fiscal policy is expected to remain close to neutral. Elevated growth will push debt ratios farther down, to 30 percent of GDP by 2018. However, some countries continue to face significant fiscal challenges—for example, Middle Eastern oil importers with high energy subsidy spending, several emerging European economies, and India.

**Global Growth Is Projected to Continue to Rise Gradually**

World growth hit a trough at about 2¼ percent in the second quarter of 2012 and reached 2¾ percent in the second half of the year. Leading indicators point to accelerating activity (Figure 1.1, panel 3; Figure 1.2, panel 1). Real GDP growth is forecast to reach 3¾ percent on an annual average basis in 2013 and

**Figure 1.7. Fiscal Policies**

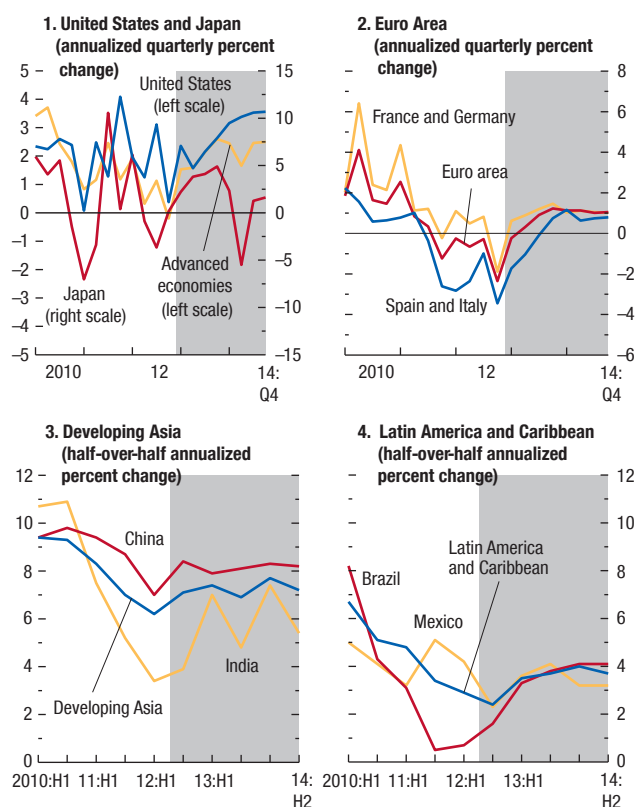
Fiscal policy will remain tight in advanced economies and broadly neutral in emerging market and developing economies. The pace of tightening will drop noticeably in the euro area during 2013–14. In advanced economies, debt ratios are forecast to stabilize soon but rise again in the medium term because of entitlement spending. In emerging market and developing economies, debt ratios are projected to continue to decline because of strong growth and low interest rates.



Source: IMF staff estimates.  
<sup>1</sup>Greece, Ireland, Italy, Portugal, Spain.  
<sup>2</sup>G7 comprises Canada, France, Germany, Italy, Japan, United Kingdom, and United States.

**Figure 1.8. GDP Growth**

Real GDP growth reaccelerated during 2012 and is forecast to continue to do so. Among the advanced economies, growth is projected to stay subdued in the euro area. Among emerging market and developing economies, the performance of developing Asia and Latin America depend importantly on a reacceleration of activity in India and Brazil, respectively.



Source: IMF staff estimates.

4 percent in 2014 (see Table 1.1)—broadly unchanged from the January 2013 *WEO Update*. Chapter 2 discusses the projections for the various regions of the world in more detail.

In advanced economies, the recovery will continue to proceed at different speeds. The main revision relates to the U.S. budget sequester, which lowers the U.S. growth forecast for 2013. Following a disappointing end to 2012, easier financial conditions, accommodative monetary policies, recovering confidence, and special factors will support a reacceleration of activity, notwithstanding still-tight fiscal policy in the United States and the euro area. The reacceleration, which assumes that policymakers avoid new setbacks and deliver on their commitments, will become apparent in the second half of 2013, when real GDP growth is forecast to again surpass 2 percent.

- Thanks to increasingly robust private demand, real GDP growth in the United States is forecast to reach about 2 percent in 2013, despite a major fiscal tightening, and accelerate to 3 percent in 2014. Weak growth in the United States in the fourth quarter of 2012 reflected the unwinding of a spurt of inventory investment and defense spending during the third quarter (Figure 1.8, panel 1). Preliminary indicators suggest that private demand remained resilient this year, but across-the-board public spending cuts are expected to take a toll on the recovery going forward.
- Activity in the euro area will pick up very gradually, helped by appreciably less fiscal drag and some easing of lending conditions. However, output will remain subdued—contracting by about ¼ percent in 2013—because of continued fiscal adjustment, financial fragmentation, and ongoing balance sheet adjustments in the periphery economies (Figure 1.8, panel 2). The projection assumes that policy uncertainty does not escalate and further progress is made toward advancing national adjustment and building a strong economic and monetary union.
- Activity in Japan is expected to accelerate sharply during the first quarter of 2013, as the economy receives a lift from the recent fiscal stimulus, a weaker yen, and stronger external demand. Growth will reach 1½ percent in 2013, according to WEO projections, and will soften only slightly in 2014 as private demand continues to garner speed, helped by aggressive new monetary easing offset by the winding down of the stimulus and the consumption tax increase.



In emerging market and developing economies, the expansion of output is expected to become broad based and to accelerate steadily, from 5 percent in the first half of 2012 to close to 6 percent by 2014. The drivers are easy macroeconomic conditions and recovering demand from the advanced economies.

- In Asia, growth has already returned to a healthy pace in China. External demand, solid consumption, a better monsoon season, and policy improvements are expected to lift activity in India (Figure 1.8, panel 3).
- Growth in Latin America will strengthen this year. Activity is expected to recover in Brazil, the region's largest economy, in response to the large policy rate cuts deployed during the past year as well as to measures targeted at boosting private investment (Figure 1.8, panel 4).
- The emerging European and Commonwealth of Independent States (CIS) economies are expected to benefit from the upturn in the advanced economies as well as from easier macroeconomic policies.
- Activity in sub-Saharan Africa is forecast to remain robust, with both resource-rich and lower-income economies benefiting from robust domestic demand.
- The Middle East and North Africa (MENA) region is a notable exception: a pause in oil production growth among oil-exporting countries is expected to lead to a temporary deceleration in the region's economic growth, while ongoing political transitions and a difficult external environment are preventing a quicker recovery in some oil-importing countries.
- In the major advanced economies, inflation will ease from about 2 percent to 1¾ percent in the United States and from 2¼ percent to 1½ percent in the euro area. Inflation will rise above zero in Japan in 2013 and will temporarily jump in 2014 and 2015 in response to increases in the consumption tax. The Bank of Japan's new quantitative and qualitative easing framework will support a steady acceleration of inflation, consistent with the Bank of Japan's policy objective (Figure 1.10, panels 2 and 3). As discussed in Chapter 3, if central bank inflation targets had not been highly credible, the years of economic slack could easily have produced deflation in many advanced economies.
- Inflation pressure is projected to remain contained in emerging market and developing economies, supported by the recent slowdown and lower food and energy prices (Figure 1.2, panel 6). IMF staff estimates point to slack in emerging Asian economies in 2013, but output is running appreciably above precrisis trends. The latter also holds for the Latin American economies, where WEO output gap estimates are projected to close. The major oil exporters also appear to be operating close to or above capacity, and some MENA economies in transition have seen large price increases in response to shocks. For these or other reasons, pressure is projected to remain fairly high in some economies and regions (Argentina, Venezuela, parts of the MENA region, various CIS and sub-Saharan African economies), spurred by food prices in some cases (India), and could surprise on the upside.

### Inflation Pressure Remains Generally under Control

There are no excess demand pressures in the major advanced economies. Inflation rates also remain generally under control in emerging market and developing economies, although unemployment rates are typically low, current account balances are falling, credit is buoyant, and asset prices are high (Figure 1.9).

Global inflation has fallen to about 3¼ percent from 3¾ percent in early 2012, and it is projected to stay around this level through 2014 (Figure 1.10, panel 1). Food and fuel supply developments will help contain upward pressure on prices of major commodities despite the expected reacceleration in global activity, according to the Commodity Market Review in this WEO report.

### Global Current Account Balances Have Narrowed Further

The setbacks to the global recovery in 2012 were mirrored in a slowing of world trade growth, which had already cooled in 2011. Fluctuations of global trade volumes are generally more amplified than those of world GDP and, in line with earlier experience, trade volumes decelerated sharply (Figure 1.11, panel 1). This attests to the strength of spillovers via the trade channel.

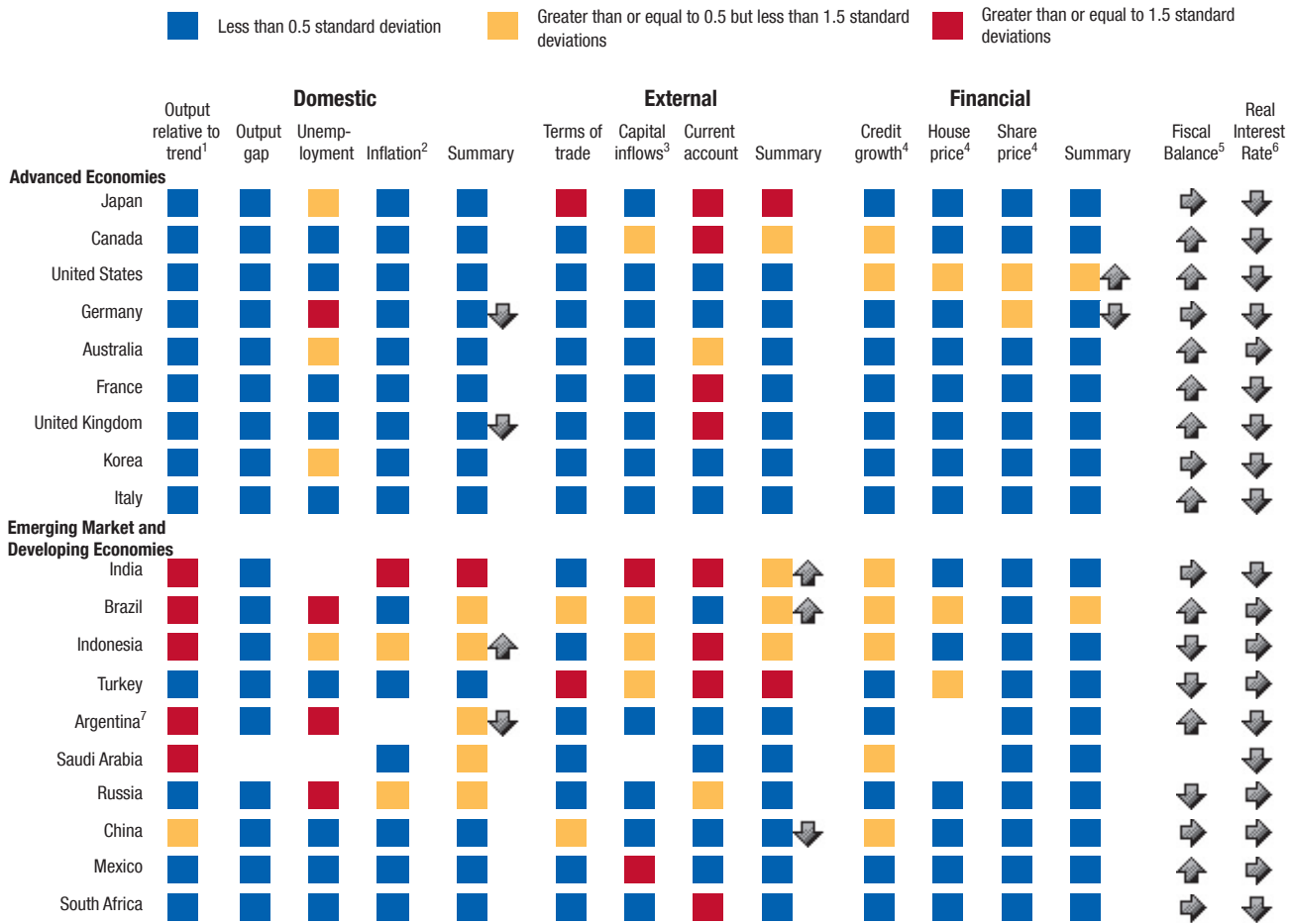
In general, currencies have responded appropriately to recent changes in macroeconomic policies and falling risk aversion: there has been some appreciation of the euro and various emerging market currencies and some depreciation of the U.S. dollar. The yen has depreciated by about 20 percent in real effective terms since mid-2012, in response to expectations for easier

**Figure 1.9. Overheating Indicators for the G20 Economies**

Domestic overheating indicators point to ample slack in the advanced economies—most indicators flash blue, although less so in Canada. By contrast, a number of yellow and red indicators for the emerging market and developing economies point to capacity constraints. External overheating indicators flash red for Japan. Rather than raising concern, these are symptoms of an internal demand rebalancing process that has helped bring down global current account imbalances.

In Germany, which is the other major surplus economy, the rebalancing process continues to lag. Unemployment is at postunification lows, reflecting both robust economic performance and structural changes in the labor market, and does not reflect overheating. The yellow or red indicators for India, Indonesia, and Turkey point to external vulnerabilities. Credit indicators point to excesses in many emerging market economies. Other financial indicators are mostly reassuring about overheating, except for Brazil.

2013 estimates above the 1997–2006 average, except as noted below, by:



Sources: Australia Bureau of Statistics; Bank for International Settlements; CEIC; *Global Property Guide*; Haver Analytics; IMF, *Balance of Payments Statistics*; IMF, *International Financial Statistics*; National Bureau of Statistics of China; Organization for Economic Cooperation and Development; and IMF staff estimates.

Note: For each indicator, except as noted below, economies are assigned colors based on projected 2013 values relative to their precrisis (1997–2006) average. Each indicator is scored as red = 2, yellow = 1, and blue = 0; summary scores are calculated as the sum of selected component scores divided by the maximum possible sum of those scores. Summary blocks are assigned red if the summary score is greater than or equal to 0.66, yellow if greater than or equal to 0.33 but less than 0.66, and blue if less than 0.33. When data are missing, no color is assigned. Arrows up (down) indicate hotter (colder) conditions compared with the October 2012 WEO.

<sup>1</sup>Output more than 2.5 percent above the precrisis trend is indicated by red. Output less than 2.5 percent below the trend is indicated by blue. Output within ±2.5 percent of the precrisis trend is indicated by yellow.

<sup>2</sup>A new methodology is employed in the April 2013 WEO for the following inflation-targeting economies: Australia, Brazil, Canada, Indonesia, Korea, Mexico, South Africa, Turkey, and United Kingdom. End-of-period inflation above the country's target inflation band from the midpoint is assigned yellow; end-of-period inflation more than two times the inflation band from the midpoint is assigned red. For the non-inflation-targeting economies, red is assigned if end-of-period inflation is approximately 10 percent or higher, yellow if it is approximately 5 to 9 percent, and blue if it is less than 5 percent.

<sup>3</sup>Capital inflows refer to the latest available value relative to the 1997–2006 average of capital inflows as a percent of GDP.

<sup>4</sup>The indicators for credit growth, house price growth, and share price growth refer to the latest available value relative to the 1997–2006 average of output growth.

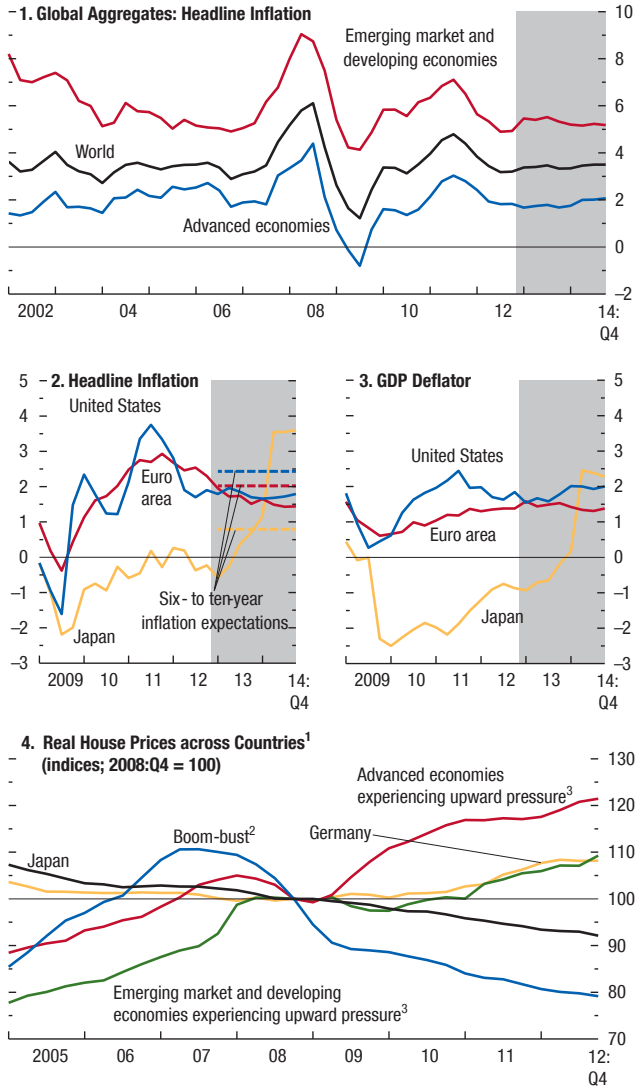
<sup>5</sup>Arrows in the fiscal balance column represent the forecast change in the structural balance as a percent of GDP over the period 2012–13. An improvement of more than 0.5 percent of GDP is indicated by an up arrow; a deterioration of more than 0.5 percent of GDP is indicated by a down arrow.

<sup>6</sup>Real policy interest rates below zero are identified by a down arrow; real interest rates above 3 percent are identified by an up arrow. Real policy interest rates are deflated by two-year-ahead inflation projections.

<sup>7</sup>The data for Argentina are officially reported data. The IMF has, however, issued a declaration of censure and called on Argentina to adopt remedial measures to address the quality of the official consumer price index (CPI-GBA) data. Alternative data sources have shown considerably higher inflation rates than the official data since 2007. In this context, the IMF is also using alternative estimates of CPI inflation for the surveillance of macroeconomic developments in Argentina.

**Figure 1.10. Global Inflation**  
(Year-over-year percent change unless indicated otherwise)

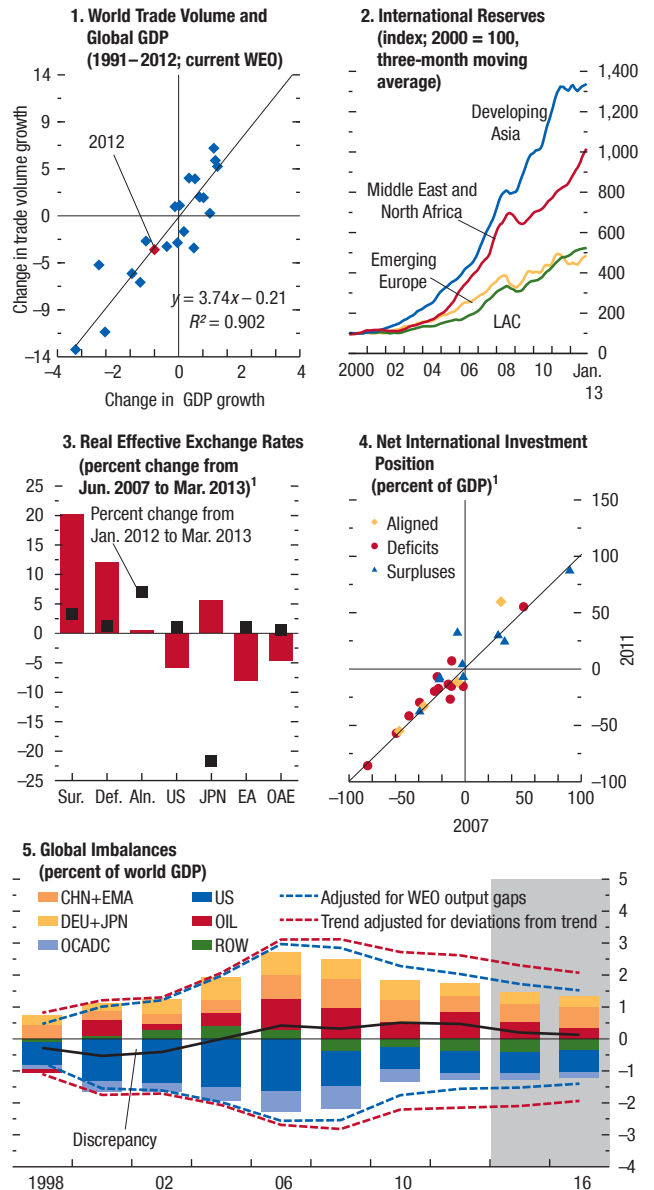
Global inflation has slowed and is projected to continue to do so, helped by stabilizing commodity prices. In the major advanced economies, domestic inflation is running below medium-term inflation targets. This suggests that there is more room for easing monetary policy. In emerging market and developing economies, emerging capacity constraints mean that inflation could surprise on the upside, and policy may have to tighten again or inflation may pick up.



Sources: Haver Analytics; Consensus Economics; Organization for Economic Cooperation and Development, *Global Property Guide*; national sources; and IMF staff estimates.  
<sup>1</sup>For the following countries, regional or metropolitan averages were used instead of national composites: Estonia, Hungary, India, Latvia, Lithuania, Philippines, Poland, Ukraine, and Uruguay.  
<sup>2</sup>Boom-bust countries: Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, New Zealand, Poland, Russia, Slovak Republic, Slovenia, South Africa, Spain, Turkey, Ukraine, United Kingdom, United States. Boom-bust countries are those in which real house prices increased by more than 10 percent in the run-up to the global financial crisis (2002–07) and have declined since then.  
<sup>3</sup>Upward pressure countries: Australia, Austria, Belgium, Canada, Colombia, China, Hong Kong SAR, Hungary, India, Israel, Malaysia, Norway, Philippines, Switzerland, Singapore, Sweden, Uruguay.

**Figure 1.11. Global Imbalances**

The latest slowdown in global trade is broadly consistent with the slowdown in global GDP. It has meant that global imbalances have declined modestly again. Whether imbalances stay narrow or widen again in the medium term depends on the extent to which output losses relative to precrisis trends are largely permanent: WEO projections assume they are, consistent with historical evidence. Although international capital flows have declined, persistent current account imbalances mean that economies' net international investment positions have not changed much.



Sources: IMF, *International Financial Statistics*; IMF, International Investment Position database; and IMF staff estimates.  
 Note: Aln. = aligned EM economies; CHN+EMA = China, Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand; Def. = deficit EM economies; DEU+JPN = Germany and Japan; EA = euro area; EM = emerging market and developing economies; LAC = Latin America and the Caribbean; OCADC = Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Turkey, United Kingdom; OAE = other advanced economies; OIL = oil exporters; Sur. = surplus EM economies; ROW = rest of the world; US = United States.  
<sup>1</sup>Classifications are based on IMF (2012a).

monetary policy and higher inflation in the future as well as a higher trade deficit and lower global risk aversion.

Taking a longer-term perspective, global current account imbalances have narrowed considerably (Figure 1.11, panel 5). Most of the adjustment took place during the Great Recession of 2008–09, when global growth was negative, and reflects lower demand in external deficit economies. This came with large declines in investment in these economies, some increase in private saving, and much lower government saving. Exchange rate adjustment played some role; policy adjustment in the key areas identified in the *Pilot External Sector Report* (IMF, 2012a) contributed disappointingly little.

The question is whether the narrowing of global imbalances will last. This depends on the future course of output and, in turn, output gaps in external deficit and surplus economies. WEO estimates do not see major differences between the output gaps in deficit and surplus economies. This may appear surprising but is consistent with widespread evidence that financial crises of the types that affected many deficit economies tend to involve permanent losses in the level of output relative to precrisis trends.<sup>1</sup> Accordingly, as output gaps in deficit economies close, global imbalances move broadly sideways in WEO projections (Figure 1.11, panel 5): the increase in investment in deficit economies will not be very large, and its effect on current accounts will be partly offset by rising government saving. However, what happens if output gaps in deficit economies are larger than estimated? Recovery in these economies would then come with a greater rebound in investment and a widening of current account imbalances, notwithstanding some increase in government saving.

The assessment in the summer 2012 *Pilot External Sector Report* (IMF, 2012a) and developments in exchange rates and WEO projections since then suggest that the real effective exchange rates of the major economies are not far from levels consistent with medium-term fundamentals (Figure 1.11, panel 3). The current account positions of the euro area and the United States are somewhat weaker and their real effective exchange rates are modestly stronger relative to medium-term fundamentals than they would be with more desirable policies. The evidence on valuation

of the yen is mixed, with valuation indicators based on the real effective exchange rate and current account pointing in opposite directions. As for the surplus economies—including China, Korea, Malaysia, and Singapore—current account positions remain, in most cases, moderately stronger and currencies moderately weaker than desirable, despite welcome adjustments, most notably less accumulation of reserves (Figure 1.11, panel 2). A new *External Sector Report* with a comprehensive assessment will be available in a few months.

The policies required to further reduce global imbalances remain broadly unchanged. The two major surplus economies need more consumption (China) and more investment (Germany). The major deficit economies, notably the United States, need to boost national saving through fiscal consolidation; other deficit economies also need structural reforms to rebuild competitiveness.

On the financial side, gross and net capital flows have declined relative to precrisis peaks, although there has been a noticeable shift from bank flows to debt securities flows. Overall, net capital flows have remained sizable, however, and net international asset and liability positions remain close to 2007 levels, suggesting that vulnerabilities from net external positions have not eased materially (Figure 1.11, panel 4).

### Risks Are More Balanced in the Short Term

The short-term risk picture has improved considerably, mainly because policy action has lowered some major short-term risks, especially a breakup of the euro area and an economic contraction resulting from a plunge over the U.S. fiscal cliff. In addition, short-term risks for a hard landing in key emerging economies have abated. Nonetheless, near-term risks in Europe could return and other downside risks persist.

#### *A quantitative risk assessment*

The fan chart confirms that short-term risks have declined, although not significantly (Figure 1.12, panel 1). A caveat is that the fan chart does not directly assess these risks but instead draws on some market- and survey-based indicators as well as the distribution of past forecast errors to gauge uncertainty around the forecast. Overall, the fan chart suggests that the probability that global growth will fall below 2 percent in 2013 has dropped to about 2 percent, from 17 percent

<sup>1</sup>For supporting empirical evidence, see Chapter 4 of the October 2009 *World Economic Outlook*.

at the time of the October 2012 WEO.<sup>2</sup> For 2014, the probability is less than 8 percent. Oil prices remain an important source of downside risk, in view of elevated geopolitical tensions (Figure 1.12, panel 2).

The IMF staff's Global Projection Model (GPM) suggests that the probability that there will be recession (two successive quarters of negative growth) during 2013 in Japan has declined sharply, to about 5 percent from about 30 percent in 2012 (Figure 1.13, panel 1). For the euro area, however, the probability of recession remains about 50 percent, because activity contracted sharply during the fourth quarter and leading indicators for the first quarter of 2013 signal not growth, but stabilization at best.

**A qualitative risk assessment**

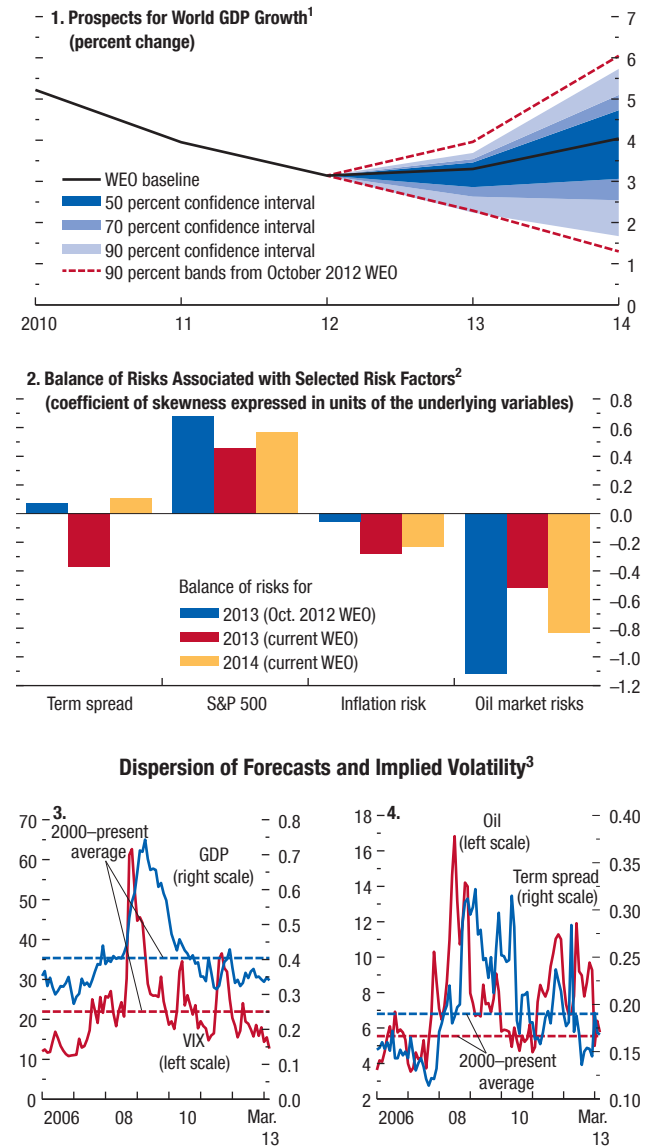
Short-term downside risks are lower than at the time of the October 2012 WEO. Risks related to oil supply shocks are broadly unchanged and those related to geopolitical factors feature new dimensions. Risks related to a hard landing of key emerging economies have receded. Others revolve around the following factors:

- *Adjustment fatigue or general policy backtracking in a financially fragmented euro area where financial markets remain highly vulnerable to shifts in sentiment, as evidenced by recent events:* The forecasts assume that significant progress is made in repairing bank and sovereign balance sheets as well as in implementing structural reforms. But progress could be held back by adjustment fatigue. Furthermore, efforts to strengthen the euro area architecture may stall. In such an event, periphery sovereigns could again come under intense market pressure, although the European Central Bank's (ECB's) Outright Monetary Transactions (OMTs) would presumably limit the increase in spreads. Furthermore, unless more progress is made in restructuring banks and moving to a genuine banking union, lending rates may come down less than expected even if sovereign spreads continue to decline. In this regard, it remains to be seen what repercussions the rescue package for Cyprus will have for financial market fragmentation.
- *The U.S. budget sequester and debt ceiling:* U.S. risks have abated thanks to the resolution of the

<sup>2</sup>This reduction reflects mainly lower baseline risk. Baseline risk is lower because April forecasts for the current year have proven more accurate than October forecasts for the year ahead, reflecting the additional information that becomes available over the ensuing six months.

**Figure 1.12. Risks to the Global Outlook**

Risks around WEO projections have narrowed, according to market metrics. These metrics continue to point to oil prices as the primary source of downside risks to global growth, while S&P 500 option prices point to some upside risks.



Sources: Bloomberg, L.P.; Chicago Board Options Exchange; Consensus Economics; and IMF staff estimates.

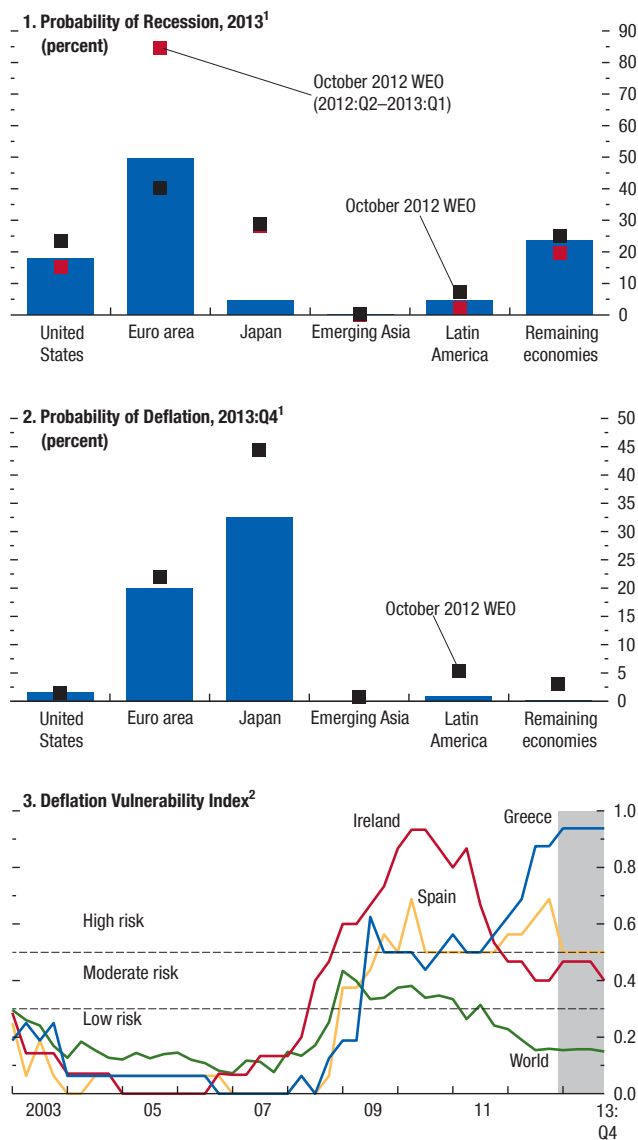
<sup>1</sup>The fan chart shows the uncertainty around the WEO central forecast with 50, 70, and 90 percent confidence intervals. As shown, the 70 percent confidence interval includes the 50 percent interval, and the 90 percent confidence interval includes the 50 and 70 percent intervals. See Appendix 1.2 of the April 2009 WEO for details. The 90 percent bands from the October 2012 WEO for the one-year-ahead and two-year-ahead forecasts are shown relative to the current baseline.

<sup>2</sup>Bars depict the coefficient of skewness expressed in units of the underlying variables. The values for inflation risks and oil market risks are entered with the opposite sign since they represent downside risks to growth. Note that the risks associated with the S&P 500 for 2014 are based on options contracts for March 2014.

<sup>3</sup>GDP measures the purchasing-power-parity-weighted average dispersion of GDP forecasts for the G7 economies (Canada, France, Germany, Italy, Japan, United Kingdom, United States), Brazil, China, India, and Mexico. VIX = Chicago Board Options Exchange S&P 500 Implied Volatility Index. Term spread measures the average dispersion of term spreads implicit in interest rate forecasts for Germany, Japan, United Kingdom, and United States. Oil measures the dispersion of one-year-ahead oil price forecasts for West Texas Intermediate crude oil. Forecasts are from Consensus Economics surveys.

**Figure 1.13. Recession and Deflation Risks**

Risks for recessions during 2013 have stayed broadly unchanged or receded. They remain relatively high in the advanced economies. The same holds for deflation risks. Deflation vulnerabilities are particularly elevated in some euro area periphery economies.



Source: IMF staff estimates.

<sup>1</sup>Emerging Asia: China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand; Latin America: Brazil, Chile, Colombia, Mexico, Peru; remaining economies: Argentina, Australia, Bulgaria, Canada, Czech Republic, Denmark, Estonia, Israel, New Zealand, Norway, Russia, South Africa, Sweden, Switzerland, Turkey, United Kingdom, Venezuela.

<sup>2</sup>For details on the construction of this indicator, see Kumar (2003) and Decressin and Laxton (2009). The indicator is expanded to include house prices.

fiscal cliff. But the budget sequester has now begun and, if not reversed soon, will continue to restrain economic activity in late 2013 and beyond. Moreover, the U.S. debt ceiling will need to be raised again later this year—failure to do so would be very damaging to the global economy.

However, real GDP growth could also be higher than projected. Improvements in financial market conditions have been stronger than expected, so confidence could surprise on the upside, bringing a greater rebound of investment and durables consumption, especially in the United States. The Federal Reserve may then have to raise policy rates earlier than planned, prompting capital outflows from emerging market economies (Figure 1.14, green line). However, in this event, any commensurate increase in emerging market risk spreads would likely be limited and temporary, and the overall result would be positive. Alternatively, more rapid progress toward a comprehensive banking union in the euro area could further decrease risk aversion and boost household and business confidence, and these could spur demand and also help improve any growth dividend emanating from structural reforms (Figure 1.15, red line).

### Risks Are Still High in the Medium Term

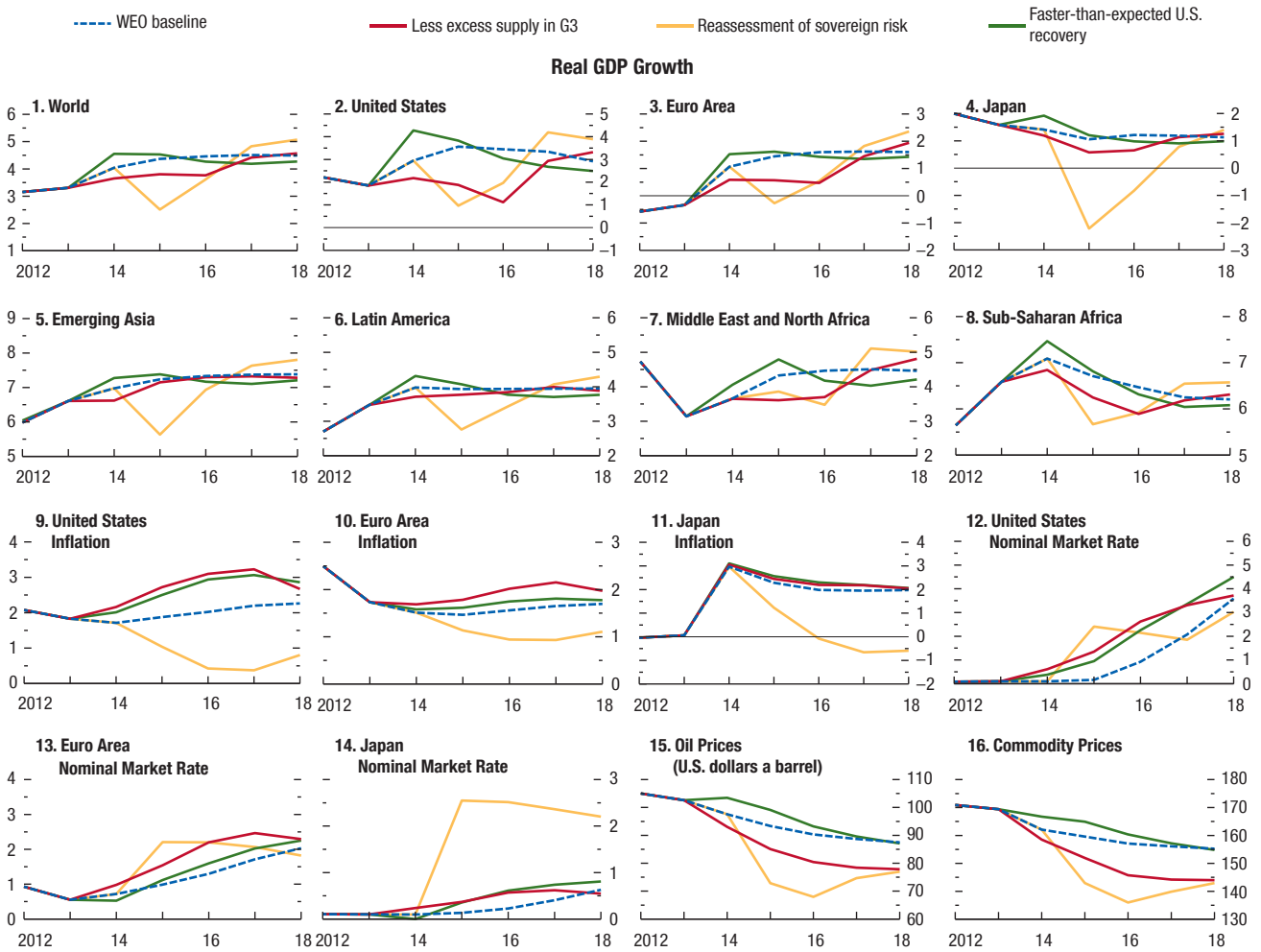
Medium-term risks fall into five categories and tilt to the downside: (1) very low growth or stagnation in the euro area; (2) fiscal trouble in the United States or Japan; (3) less slack than expected in the advanced economies or a sudden burst of inflation; (4) risks related to unconventional monetary policy; and (5) lower potential output in key emerging market economies.

*Euro area risks:* The forecast assumes that periphery risk spreads will gradually contract, fiscal adjustment will ease appreciably starting during 2014–15, and investment and consumption will rebound. However, in the near term, conditions in the periphery will remain strained: sovereign debt burdens are likely to increase further; banks will continue to face deleveraging pressure, elevated funding costs, deteriorating asset quality, and weak profits; and many corporations and households carry heavy debt burdens. In the face of high taxes, tight lending conditions, and weak domestic demand, investment may fail to take off, growth may disappoint, fiscal revenues may fall short, and it may not be possible to ease off on consolidation as

**Figure 1.14. Interest Rate Risk Scenarios**  
(Percent unless noted otherwise)

The Global Integrated Monetary and Fiscal Model (GIMF) is used here to consider scenarios under which interest rates in the major advanced economies rise from their current low levels much sooner than envisaged in the WEO baseline. Three potential causes are considered: a faster-than-expected recovery in the U.S. economy; less excess capacity than expected in G3 economies; and rising concerns about fiscal sustainability. In the faster-than-expected U.S. recovery (green line), rising private demand quickly closes the output gap, putting upward pressure on inflation and thus prompting the Federal Reserve to raise the policy interest rate in 2014. Higher returns in the United States and increased optimism about advanced economy growth prospects lead to some capital flowing from emerging market economies back to advanced economies. However, the positive impact from higher advanced economy growth more than offsets the impact of capital outflows, and all regions of the world experience faster growth in 2014 and 2015. In the scenario with less excess supply than expected in the baseline (red line), the misperception starts in 2014 and is largest in the United States, roughly half the U.S. magnitude in the euro area, and a quarter of the U.S. magnitude in Japan.

With less excess supply than expected, inflation pressure starts to build in 2014 despite growth being weaker than in the baseline. Consequently, monetary policy starts to tighten in 2014, and interest rates in advanced economies are above baseline for most of the WEO horizon. Lower-than-expected supply capacity in advanced economies results in below-baseline GDP growth from 2014 onward, with negative implications for growth in all emerging market economies. In the scenario under which markets become concerned about medium-term fiscal sustainability (yellow line), sovereign risk premiums rise sharply in the United States and Japan, but more modestly elsewhere in 2015. Heightened fiscal sustainability concerns also lead to further increases in risk premiums for firms and households worldwide. With policy interest rates still very low in advanced economies in the baseline, there is only limited scope for monetary policy to offset the impact on market interest rates, and GDP growth falls sharply along with inflation in 2015. In emerging market economies, although the use of available monetary policy space helps mitigate the impact, growth also falls notably below baseline for several years.

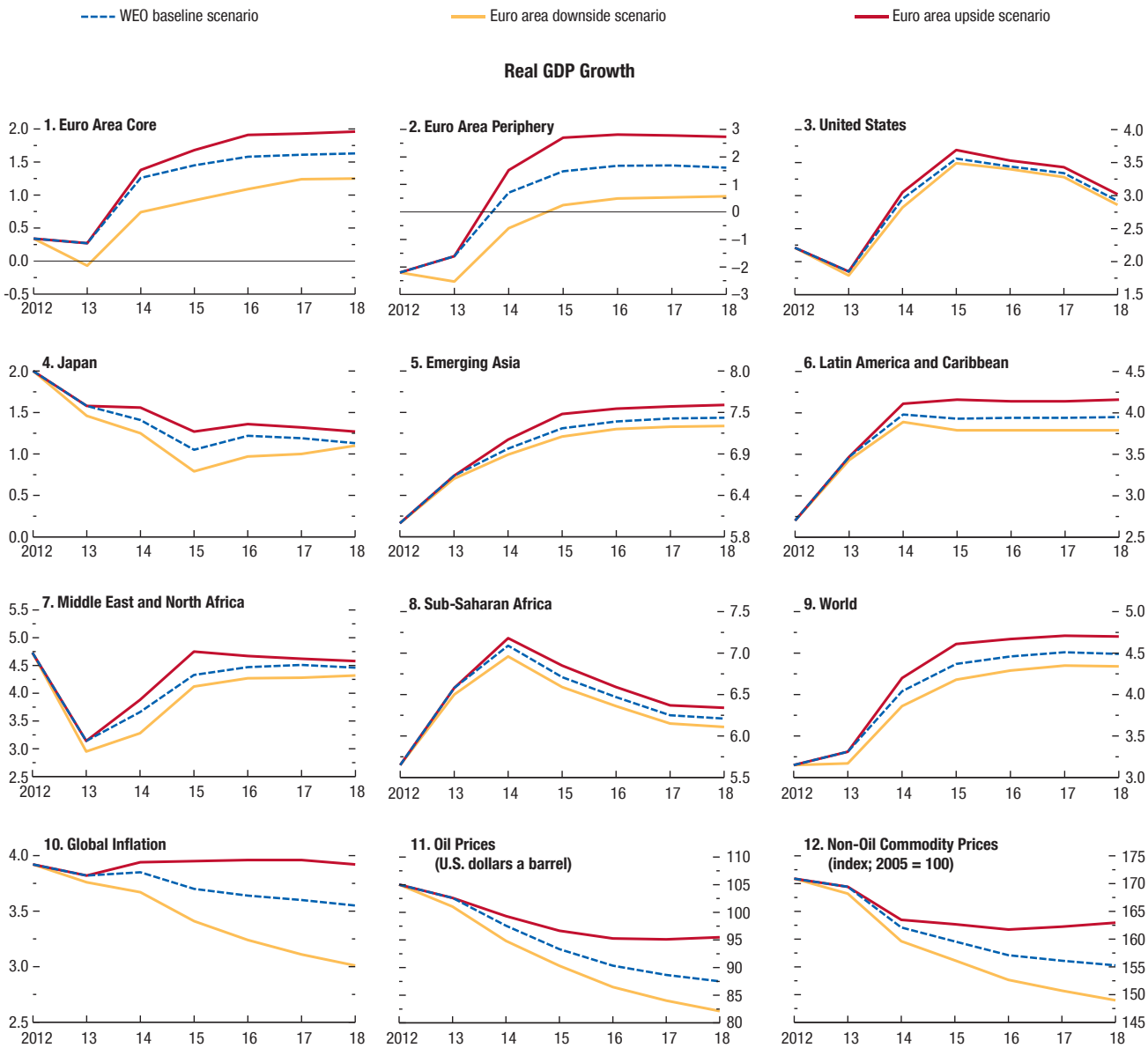


Source: IMF staff estimates.  
Note: G3 = euro area, Japan, United States.

**Figure 1.15. Euro Area Scenarios**  
(Percent unless noted otherwise)

These scenarios are simulated using EUROMOD, a new IMF model of the global economy, and consider the implications of two alternative paths for the euro area. The downside scenario (yellow line) embodies a continual process of deterioration whereby weaker-than-expected macroeconomic outcomes from a reduction in investment (as confidence wanes) heighten concerns about fiscal sustainability. This heightened concern leads to rising risk premiums and additional tightening in fiscal policy, further weakening the macroeconomic environment and confidence, notwithstanding easing by the European Central Bank (ECB). Specifically, in this scenario investment in the periphery economies falls by about 6 percent each year, corporate interest rates are about 3 percent higher, and the average (of the short- and long-term) sovereign rate is 1 percent higher than in the WEO baseline by 2018. The higher sovereign rate prompts periphery economies to tighten the fiscal stance by an additional ¼ percent of GDP each year. In core economies, ECB easing eclipses a modest increase in risk premiums and interest rates end up lower than in the WEO baseline. The increase in risk premiums spills over into other regions of the world.

In the upside scenario (red line), faster-than-expected progress both on establishing the Single Supervisory Mechanism (SSM) and on giving the European Stability Mechanism (ESM) the ability to recapitalize banks sets the stage for better-than-expected macroeconomic outcomes in 2014 and beyond. Furthermore, the reforms implemented at a national level begin to pay off sooner than expected, starting in 2014, with some offsetting effects from an increase in the policy rate by the ECB. As a result, sovereign and corporate risk premiums start to decline. Declines in the average sovereign and corporate interest rates are largest in the periphery, amounting to about 0.7 and 1.5 percentage points, respectively, relative to the WEO baseline. In the core countries, the tightening of monetary policy is the dominant effect on all interest rates, so the average sovereign and corporate rates rise relative to the WEO baseline. Starting in 2014, the annual increase in productivity is roughly 0.5 percent in periphery countries and 0.1 percent in core countries, while the annual increase in investment is almost 5 percent in the periphery and 0.8 percent in the core.



Source: IMF staff estimates.



projected. For as long as the major periphery sovereigns maintain market access, with the support of OMT asset purchases if necessary, the damage to growth may be contained and the impact on the rest of the world limited (Figure 1.15, yellow line). However, the damage and the spillovers could be much worse if pessimism builds on pessimism and leads to a major cutoff of credit to periphery sovereigns or if stagnation raises doubts about the viability of the EMU.

*Fiscal risks:* The main risks relate to fiscal policies in the United States and, especially, Japan, which are not sustainable. It is therefore disconcerting that the prospects for comprehensive fiscal reform have dimmed in the United States and that policymakers in Japan have renewed fiscal stimulus before adopting a strong medium-term consolidation plan and growth strategy. The WEO projections assume that neither economy will have trouble financing its deficits and debt, because risk aversion will keep up demand for their bonds, their central banks will continue their quantitative easing programs, and deficits will continue to be reduced in the United States and will be lower in Japan starting in 2014. However, as discussed in previous WEO reports, a medium-term tail risk is the perception that these economies' political systems will be unable to deliver the required adjustments in a timely manner, which could scare off investors.<sup>3</sup> An increase in the sovereign risk premiums for these economies could have a large effect on global activity. Even a moderate increase in interest rates on their sovereign debt—for example, in response to a general reallocation of savings from foreign into very liquid domestic assets—would appreciably lower world growth (Figure 1.14, yellow line). Sovereign and corporate risk premiums would likely increase everywhere and confidence would suffer, setting back global investment and consumption. G3 (euro area, Japan, United States) fiscal policy may then tighten in an attempt to regain confidence among investors. With G3 monetary policy rates still low, there will be limited scope for policy rate cuts to offset the impact of higher risk premiums on the cost of borrowing. G3 exchange rates would depreciate, but with little effect, as global demand falls.

*Monetary policy risks:* The WEO projections assume that interest rates in the major advanced economies stay close to the zero lower bound for several years

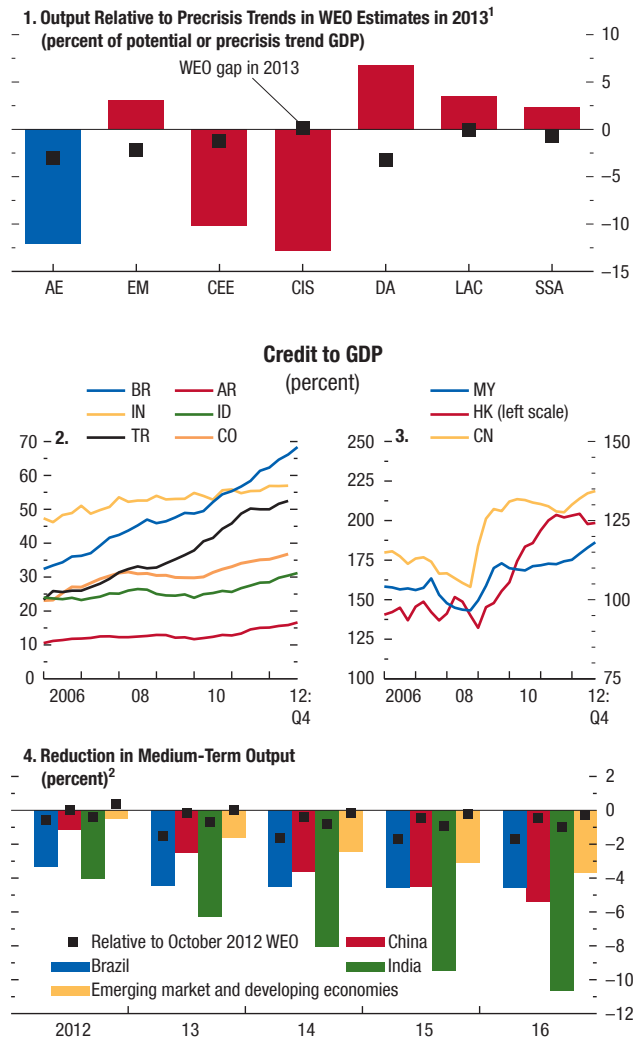
and that exit from unconventional monetary policies can proceed gradually and without unsettling financial markets. This assumption is subject to two types of risk: risk related to less-than-estimated potential output and risk related to unconventional monetary policies.

- *Problems related to less excess supply than estimated in G3 economies:* The WEO projections see appreciable slack in the advanced economies, even though inflation has been remarkably stable. Chapter 3 attributes the latter to the stability of inflation expectations and high central bank credibility as well as to nominal rigidities. However, what if inflation has been stable because there is much less slack than estimated? Expected and actual inflation would then move up sooner than projected, although a sudden inflation scare, such as in 1994—when U.S. unemployment dropped below 6 percent and markets thought the Federal Reserve was falling behind the curve—looks unlikely in the medium term. Rather, inflation expectations would likely increase gradually. Assuming such rising expectations met with timely G3 fiscal and monetary tightening, the increase in inflation would be temporary and limited and spillovers from the G3 to the rest of the world would be moderately deflationary (Figure 1.14, red line). This would contrast with the experience of the 1970s and early 1980s, when central banks were much too slow to raise interest rates and very large rate hikes became necessary to bring inflation and expectations back under control. These hikes had very damaging effects domestically and on emerging market economies.
- *Problems related to unconventional monetary policies:* Clearly, such policies are helpful in supporting confidence and activity, but they come with risks for the medium term. These risks fall into two categories: risks related to side effects from very low interest rates and the policies themselves, and risks related to the unwinding of these policies.
  - *Risks related to side effects* are broadly unchanged since the October 2012 WEO and are discussed in depth in the April 2013 GFSR. The lengthy period of very low short-term interest rates and unconventional monetary policies may encourage unduly risky lending, balance sheet mismatches, and high leverage. There are now some signs of financial engineering (such as repurchases of equities with funds raised by issuing debt securities) but not of asset price bubbles in advanced economies. However, a growing

<sup>3</sup>See Box 1.4 of the October 2010 *World Economic Outlook* and Box 1.2 of the October 2012 *World Economic Outlook*.

**Figure 1.16. Capacity and Credit in Emerging Market Economies**

WEO output gap estimates do not point to major excess demand pressures. However, many Asian and Latin American emerging market economies operate appreciably above precrisis trends. And they have seen a large run-up in credit, even relative to unusually buoyant output. Recent shortfalls in activity from projections have prompted significant downward revisions to medium-term output levels.



Sources: Haver Analytics; IMF, *International Financial Statistics*; and IMF staff calculations. Note: AE = advanced economies; AR = Argentina; BR = Brazil; CEE = central and eastern Europe; CIS = Commonwealth of Independent States; CN = China; CO = Colombia; DA = developing Asia; EM = emerging market economies; HK = Hong Kong SAR; ID = Indonesia; IN = India; LAC = Latin America and the Caribbean; MY = Malaysia; SSA = sub-Saharan Africa; TR = Turkey. <sup>1</sup>Precrisis trend is defined as the geometric average of real GDP level growth between 1996 and 2006. <sup>2</sup>Relative to the September 2011 WEO.

concern is that corporations in emerging market economies have been leveraging up, including in foreign-currency-denominated debt. Accordingly, were capital flows to emerging market economies to reverse suddenly, they could expose vulnerabilities in these economies.

- *Risks associated with the unwinding of central bank balance sheets* reflect the extent to which central banks may face significant trade-offs between price stability and financial stability in the process of tightening monetary conditions. Such risks are particularly relevant for central banks that have been purchasing large amounts of debt securities with long maturities, such as the Federal Reserve and the Bank of Japan, which recently adopted continued monthly asset purchases, or the Bank of England.<sup>4</sup> In principle, central banks can tighten monetary conditions simply by raising the interest rate on excess reserves, but unpredictable variations in the transmission to broader financial conditions could make it quite difficult for policymakers to set that rate appropriately. Under such circumstances, central banks can drain some reserves from the banking system by issuing term deposits or engaging in reverse repurchase agreements, but the scope for using such tools is likely to be limited. Another approach for reabsorbing liquidity would be to issue debt obligations that can be held outside the banking system, but some central banks (including the Federal Reserve) have no legal authority to issue their own paper, and others could face opposition from a heavily indebted sovereign. Finally, the central bank can shrink the size of its balance sheet by selling its securities in the open market, but engaging in such sales at a rapid and unpredictable pace could have adverse effects on financial market functioning. In effect, central banks could face a difficult choice between exit that is associated with excessive inflation and exit that unsettles financial markets.

*Emerging market risks:* Activity in emerging markets has been strong but less so than projected during the past couple of years. While cyclical factors have played a role, so have permanent shocks—markdowns to medium-term output have now reached almost 4 percent since the September 2011 WEO (Figure 1.16,

<sup>4</sup>The ECB has declared its readiness to intervene in sovereign debt markets to stem convertibility risks but has yet to make any purchases. The expansion of its balance sheet is largely related to refinancing operations that unwind naturally.

panel 4). The WEO forecast, however, continues to see strong growth ahead, averaging about 6 percent annually during 2013–18. An important risk is that recent forecast disappointments are symptomatic of deeper, structural problems, heralding cutbacks in investment or capital outflows and lower-than-forecast growth. The risks for such an outcome are present in the short term, but they are more relevant for the medium term. Were investment to disappoint in the BRICS (Brazil, Russia, India, China, South Africa), the result would be significantly reduced global growth, inflation, and commodity prices (Figure 1.17). If this came with capital outflows, the effect on BRICS output would be appreciably larger. Also, contagion would likely raise the risk spreads of many other emerging market economies. For the advanced economies, the effect of falling external demand on output would outweigh the effect of returning capital. In such a scenario, global growth would dip to about 1½ percent, implying a decline in output per capita—the first such recession in global output per capita to originate in emerging market economies.

### Policy Challenges Center on Debt in Advanced Economies and Potential Excesses in Emerging Market and Developing Economies

The global economy is on the mend again, but policies in the advanced economies are unusually tight on the fiscal front and gaining insufficient traction on the monetary front (Box 1.1). Among the risks ahead, the most insidious relate to debt overhangs and fiscal deficits in advanced economies and potential output growth and budding financial excesses in emerging market and developing economies. These risks may appear far away, but tackling them proactively would improve confidence and investment in the short term and set the global economy on a more sustainable medium-term growth trajectory.

#### Requirements in Advanced Economies

##### *Fiscal tightening must continue at a pace the recovery can bear*

Given still-high public debt levels and attendant risks, fiscal consolidation over the medium term needs to continue. The April 2013 *Fiscal Monitor* highlights these most pressing requirements:

- *Strong medium-term plans:* The United States and Japan need strong medium-term plans to arrest and reverse

the increase in their public debt ratios—the recent fiscal stimulus in Japan makes this even more urgent.

- *Entitlement reform:* Only limited progress has been made on entitlement reform. Almost no progress has been made in tackling health care spending, which is on an unsustainable trajectory, with projections indicating very large increases in net present value terms in many advanced economies.
- *Calibrating short-term fiscal adjustment:* Fiscal plans for 2013 are broadly appropriate in the euro area. In the United Kingdom, where recovery is weak owing to lackluster demand, consideration should be given to greater near-term flexibility in the fiscal adjustment path.<sup>5</sup> In Japan, the stimulus will support the new monetary policy framework but also increases fiscal vulnerabilities—the authorities plan to announce a medium-term fiscal consolidation plan this summer. In the United States, the concern is that the budget sequester will lead to excessive consolidation. Some advanced economies where private demand has been chronically disappointing should consider smoothing the pace of consolidation if they have the fiscal policy room to maneuver. By contrast, should growth surprise on the upside, policymakers should take advantage of the opportunity to reduce headline deficits faster.

Progress in putting in place medium-term fiscal plans and entitlement reforms would also help quell concerns that have been expressed about the fiscal dominance of monetary policy following the massive central bank purchases of government paper since mid-2008 (Figure 1.4, panel 6). The fear is that when the time comes to raise interest rates to forestall inflation, central banks will be hesitant to do so because of potential losses on their own balance sheets as well as pressure from overindebted governments. The more progress is made in lowering future fiscal deficits in the advanced economies, the greater is the scope to pursue supportive monetary policy without triggering concern about fiscal dominance, central bank independence, or a resurgence of inflation.

##### *Monetary policy needs to stay easy*

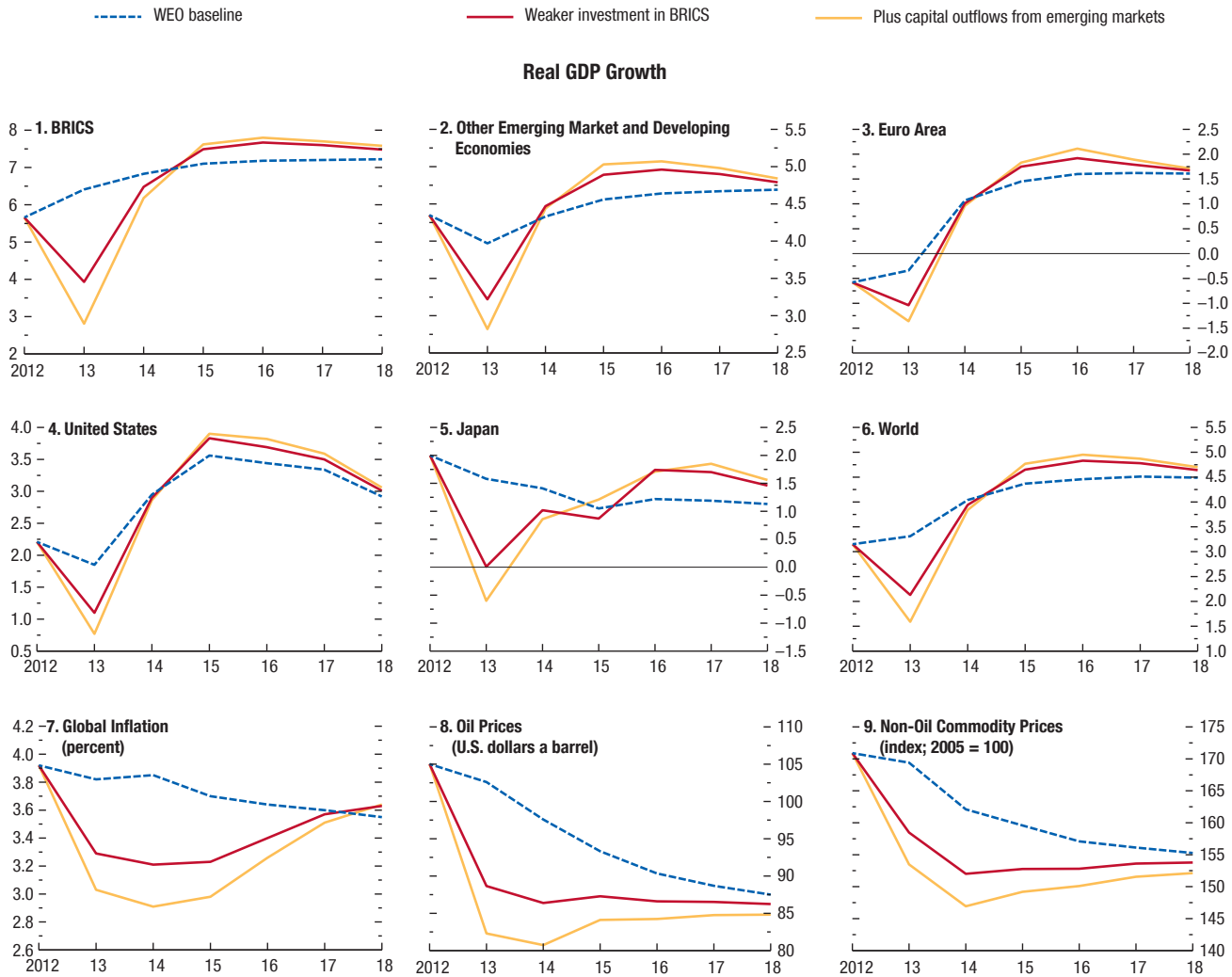
Monetary policy needs to stay highly accommodative to support activity as fiscal policy tightens. The challenges facing central banks are to decide what more, if anything, to do and how to prepare for the eventual exit

<sup>5</sup>On a fiscal year basis (2013/14), structural tightening, as measured by the change in the cyclically adjusted primary balance, is expected to be around 1 percentage point of potential GDP.

**Figure 1.17. Emerging Market Downside Scenarios**  
(Percent, unless noted otherwise)

These scenarios are simulated using EUROMOD, a new IMF model of the global economy, and consider the implications of weaker private investment in emerging market economies as well as capital outflows. Given that private investment demand in emerging market economies has surprised on the downside recently, the first scenario (red line) has investment demand in the BRICS 10 percent below the WEO baseline level in 2013, but recovering fairly quickly back to baseline by 2016.

In the second scenario (yellow line), in addition to the fall in investment, capital outflows from emerging market economies lead to a sharp tightening in financial conditions. In the BRICS, sovereign and corporate risk premiums rise sharply in 2013, while the tightening in financial conditions in other emerging market economies is roughly half the magnitude of that in the BRICS. The tightening in financial conditions is short lived, with risk premiums back to baseline levels by 2016.



Source: IMF staff estimates.  
Note: BRICS = Brazil, Russia, India, China, South Africa.

from unconventional policies. The latter may require changes to regulations or laws governing the activity of central banks, which could take time to implement. There are various options for the short term:

- *Conventional easing:* Little room is left for this option except in the euro area, where domestic (GDP) inflation has run well below the ECB's close-to-but-below 2 percent target since 2009 (Figure 1.10, panel 3), and headline inflation is projected to do so over the medium term (Figure 1.10, panel 2).
- *Better communications:* The Federal Reserve's forward policy guidance appropriately stresses that inflation will be allowed to move slightly above the 2 percent long-term target without necessarily triggering a rate hike, provided long-term inflation expectations remain well anchored and unemployment stays above 6½ percent. This may help bring down perceived real interest rates.
- *Changes to monetary policy frameworks:* Some are advocating that central banks switch to nominal income targeting. Although there are arguments in favor of such a shift, it goes against the principle of "targeting what you can hit." Furthermore, if the concern is to better anchor long-term inflation expectations so as to gain more room for short-term policy maneuvering, targeting a rising path for the price level—or, equivalently, targeting the *average* rate of inflation over a period of several years—appears superior.
- *Unconventional easing:* Purchases of assets, long-term refinancing operations, and other interventions in financial markets are helping reduce funding costs and strengthen confidence. The main problems with monetary policy transmission now are the result of weak banks in crisis economies or, in Japan, because of the zero lower bound on interest rates and continued deflation. Whereas in the United States the banking sector has been gaining strength, in the euro area, the weaknesses show few signs of abating. The best way to address continued euro area weakness is through a range of policies to strengthen bank balance sheets, including progress toward a banking union.
- *Recalibrating supervisory policy stances:* On the one hand, more bank lending is important to sustaining recovery; on the other hand, more capital and liquidity are necessary for building a safer financial system. It is very difficult to make progress on both fronts at the same time, unless public sectors stand ready to put more capital into weak but viable banks or to subsidize new lending. Examples of the latter are Japan's Loan

Support Program and the United Kingdom's Funding for Lending Scheme (FLS). Although it is still early days, so far the FLS's impact has been limited, encouraging mortgage lending more than lending to small and medium-size businesses. Within the euro area, prudential practices have contributed to financial fragmentation, with supervisors in core economies discouraging lending to periphery economies for fear of bank losses that may hit the national fiscal purse. These incentives are difficult to address, except by moving into a comprehensive banking union.

Concern that easy monetary policy may trigger high inflation appears overblown in the current situation. Chapter 3 emphasizes that Phillips curves have become flatter and inflation expectations better anchored during the past 20 years. However, central banks should have clear strategies for ensuring that long-term inflation expectations stay well anchored. This may become a challenge if the economies rebound strongly while their central banks' balance sheets remain very large. Central banks would then need all the legal and operational freedom they could get to reabsorb this liquidity—including the ability to issue their own paper.

Policymakers should consider the complications and risks associated with exceptionally easy monetary policies. More progress with medium- and long-term fiscal adjustment, including entitlement reform, would lower the need for near-term fiscal consolidation; and more progress in mending weak balance sheets would foster the transmission of low interest rates to the real economy. Progress on both fronts would be very important to lower the spillovers and risks emanating from unconventional monetary policies.

#### *Financial policies can help improve monetary policy transmission*

Financial policies need to address a variety of challenges, which are discussed in the April 2013 GFSR, including fostering better pass-through of monetary policy to the real economy. To that end, measures for building stronger banks are especially urgent in the euro area. Relative to U.S. banks, euro area banks have made less progress in rationalizing their balance sheets, cutting administrative costs, and rebuilding profitability and capital. In addition, they remain too reliant on wholesale funding. The following are needed:

- recapitalizing, restructuring, or closing weak banks not only in the periphery but also in the core economies;

- a stronger monetary union, as discussed in Chapter 2;
- scope for direct bank recapitalization through the European Stability Mechanism; and
- support for the development of new credit instruments for nonfinancial enterprises (such as securitized lending for small and medium-size businesses).

Furthermore, weak balance sheets are likely weighing on activity in periphery economies. Households and nonfinancial companies are likely to require some help in restructuring debts to banks. Compared with targeted restructuring policies, traditional bankruptcy has many drawbacks in a deep downturn. Policymakers should consider viable alternatives to default and closure, while avoiding distortions to competition from zombie enterprises. For example, alternatives could include incentives for debt-for-equity swaps or targeted interventions toward working capital support. European policymakers must also stay proactive and focused on preventing sovereign debt burdens that so discourage activity that adjustment becomes self-defeating (Box 1.2).

### *Structural policies are necessary to lower unemployment and rebuild competitiveness*

The October 2012 WEO discussed the structural challenges and policies in detail, and progress on the various fronts is critical for stronger global growth. Rebuilding competitiveness is a particular challenge for the periphery economies in the euro area. Large external imbalances in these countries were rooted in strong import growth, changes in external funding (from transfers to debt), and deteriorating income balances (Box 1.3). Their export market shares, by contrast, held up relatively well. The challenge for them is to engineer a recovery within the new, tighter external funding constraints, and this will require policies to boost productivity growth and foster job-friendly wage setting so as to achieve sustained gains in export market shares.

The best way to address high unemployment is with macroeconomic and structural policies that foster growth. However, its magnitude and duration increasingly warrant strong complementary structural and labor market policies. Active labor market policies can help prevent further disengagement from the labor market, particularly by the young and the long-term unemployed. The Nordic countries have such programs. Some countries recently implemented youth-employment guarantees.

Trade has played an important role in pushing global growth onto a higher trajectory in recent decades. It is thus disappointing that the Doha Development Round is not gaining traction, but it is encouraging that a growing number of bilateral trade agreements are under discussion, including recently between the United States and the European Union. These discussions hold the promise of providing a new impetus to trade and global trade liberalization negotiations.

### **Requirements in Emerging Market and Developing Economies**

With global prospects improving, the main macroeconomic policy challenge in emerging market and developing economies is to recalibrate policy settings to avoid overstimulation and rebuild macroeconomic policy buffers. The macroeconomic policy stance in many of these economies is still very accommodative, supporting domestic demand in the face of weak external demand from advanced economies. In addition, policies must address risks from recent, sustained rapid credit growth and high asset prices (Figure 1.16, panels 2 and 3). The April 2013 GFSR also flags risks from rising corporate leverage and increasing reliance on foreign currency debt.

The appropriate pace and mix of policy recalibration vary considerably—detailed policy prescriptions are in Chapter 2. In general, emerging market economies can afford to rebuild policy buffers gradually. Overheating concerns largely subsided as growth slowed during 2011–12 (Figure 1.8, panels 3 and 4). Headline and core inflation are generally declining, while IMF staff estimates suggest that some slack remains (Figure 1.16, panel 1). Real credit growth has moderated in many economies (Figure 1.6, panels 2 and 3) as a result of tighter bank credit standards (Figure 1.6, panel 4).

Policymakers must carefully consider the risks of policies falling behind the curve and becoming procyclical, which would amplify rather than modulate the cycle. The concern is that too much of the recent downturn is attributed to cyclical rather than structural factors. WEO estimates suggest that the recent downward revision of medium-term prospects in emerging market and developing economies does not reflect a reassessment of medium-term prospects in China alone (Figure 1.16, panel 4). The issue is broader and most obvious in economies where supply factors, such

as infrastructure or labor market bottlenecks, and domestic policy factors, such as policy uncertainty and regulatory obstacles, have contributed to the recent stalling of investment—examples include Brazil, India, and Russia. The slowdown in capital accumulation will likely lower potential output in the medium term.

Another common challenge is to manage risks from rapid credit expansion. In many emerging market economies, credit growth has either slowed markedly over the past year or is expanding within normal bounds. Outright credit booms are currently a concern in only a few economies. These economies may need tighter prudential policies and frameworks to maintain banking sector health, and achieving a soft landing may also be helped by some macroeconomic policy tightening to moderate the feedback from activity to credit. In the other economies, policy tightening should primarily be a function of inflation pressure and slack. However, regulation and supervision should ensure that banks address potential legacy credit quality and profitability problems from a recent period of very rapid credit expansion.

With improving global economic conditions, substantial capital inflows in emerging market economies are likely to reemerge, which may require adjustments in the policy mix. Specifically, monetary policy tightening may not be as effective in forestalling overheating because it could reinforce capital inflows and boost credit. Economies with current account surpluses should consider allowing nominal appreciation, which in turn should provide room for gradual monetary tightening. In economies with current account deficits, exchange rate appreciation will not be helpful, and policymakers may need to consider tightening macroprudential measures in conjunction with monetary policy tightening. They should also consider putting greater emphasis on fiscal policy tightening, which can help keep output close to potential while avoiding unhelpful exchange rate appreciation.

The relatively strong fiscal position of most emerging market economies has allowed them to adopt a neutral

stance in response to slowing growth, but when the environment allows, they should return to rebuilding room for policy maneuvering. High public debt ratios call for more immediate fiscal consolidation in some economies. Although public debt ratios in most emerging market and developing economies are lower than in advanced economies, there is a risk that the debt dynamics could become less benign. With downside risks to the medium-term growth potential and upside risks to bond yields, the interest-growth differentials could become less favorable. Debt ratios would then start increasing rapidly with primary fiscal deficits. The need for fiscal consolidation, therefore, may be more urgent in economies where debt ratios are already high or debt dynamics less favorable (Egypt, Hungary, Jordan), fiscal deficits are large (India, Pakistan), or structural impediments to growth are already present (Egypt, India, Jordan, Pakistan).

Many *low-income countries* maintained their dramatically improved growth performance of the past two decades throughout the 2011–12 global recovery. As discussed in Chapter 4, structural policies aimed at fostering favorable business and investment regimes have contributed significantly to their success. In addition, more foreign direct investment and improved fiscal positions helped achieve strong growth without major excess demand pressure. Against this backdrop, policymakers should rebuild fiscal and external buffers if these are low. In many economies, high and volatile commodity prices have led to strains on the budget, and fiscal reform is urgently needed to better target related subsidy regimes.<sup>6</sup> In economies where the commodity sectors are expanding rapidly, it will be critical to put in place policy frameworks that insulate the economy from the effects of commodity price volatility while using commodity revenue to meet urgent public infrastructure and social needs.

<sup>6</sup>See Appendix 1 of the April 2013 *Fiscal Monitor*.

## Special Feature: Commodity Market Review

### Overview

The overall IMF commodity price index fell by 9 percent since peaking in April 2011, because of generally weaker demand and an uncertain global economic outlook—a decline anticipated in the October 2012 *World Economic Outlook* (Figure 1.SF.1, panel 1). Nonetheless, prices remain elevated compared with historical levels (Figure 1.SF.1, panel 2).

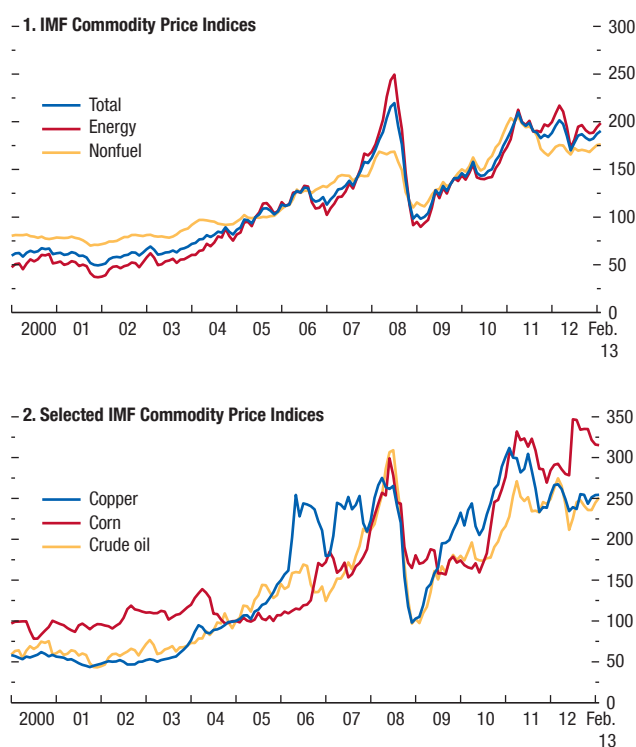
Commodity prices bottomed out in June 2012 and have since risen by 12 percent as a result of supply constraints and some improvement in demand. Weather-related supply shocks helped lift cereal prices higher by 10 percent, although they have eased slightly. Energy prices climbed 15 percent on lower production by the Organization of the Petroleum Exporting Countries (OPEC) and stronger emerging market and U.S. demand. Metal prices rose 10 percent on expectations of stronger emerging market demand, but stocks remain high and most markets are in surplus.

Recent declines in commodity price volatility reflect improvements in global financial conditions, realized on the back of policy actions that lowered the acute crisis risks (Figure 1.SF.2). These improvements also affected forward-looking indicators such as purchasing managers' indices and equity prices (along with prices of other risky assets), which rose globally (Figure 1.SF.3).

The near-term outlook for commodity prices, as reflected in futures prices, shows broad declines across all main commodity groups, including oil. Overall, prices are projected to decline by 2 percent in 2013 (year over year), with improving supply prospects for all main commodity sectors. Energy prices are expected to fall by almost 3 percent on recovering oil supply from the past year's outages and strong growth in non-OPEC supply, particularly in North America, which will continue to reduce U.S. crude oil imports. Food prices are projected to fall by more than 2 percent on the assumption of normal weather and improved harvests, and beverage prices are expected to drop by about 12 percent on abundant supply. Only metal prices are projected to trend upward, by more than 3 percent, which is consistent with global economic recovery and higher demand, especially in China.

The authors of this feature are Samya Beidas-Strom, Marina Rousset, and Shane Streifel, with research assistance from Daniel Rivera Greenwood and contributions from Olivier Coibion and Akito Matsumoto.

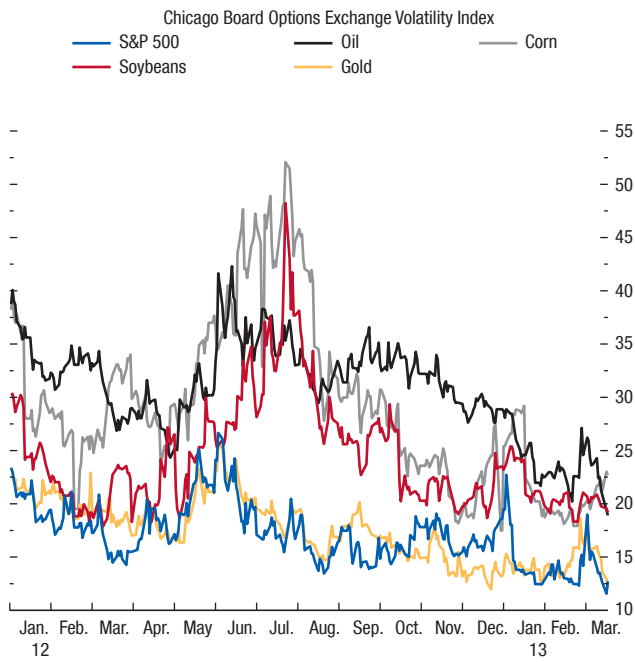
**Figure 1.SF.1. IMF Commodity Price Indices**  
(2005 = 100)



Source: IMF, Primary Commodity Price System.

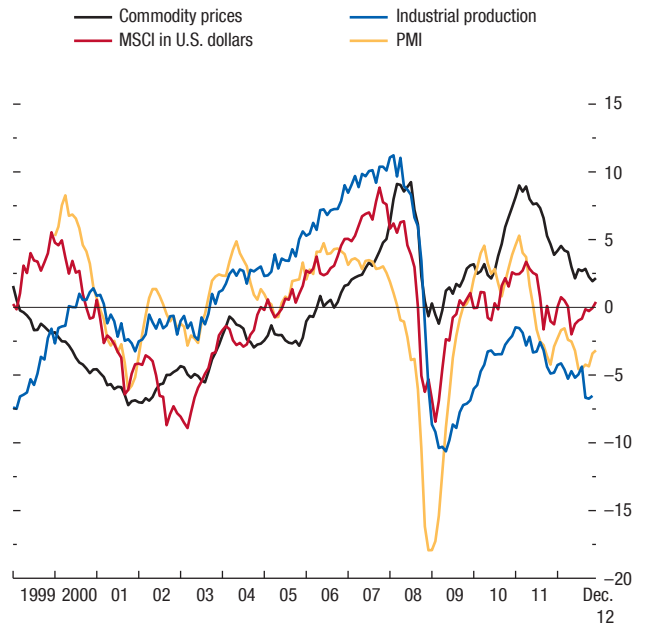


**Figure 1.SF.2. Equity and Commodity Market Volatility Indices**



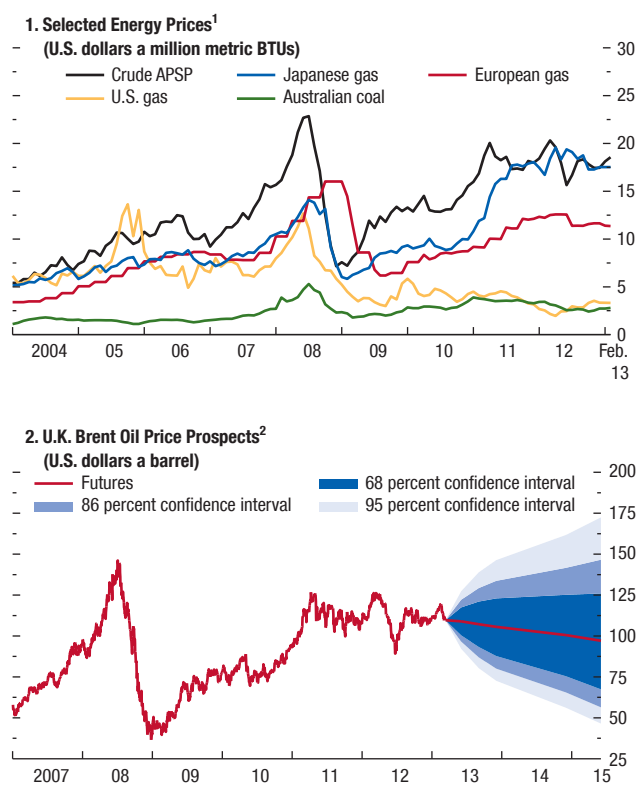
Source: Bloomberg, L.P.

**Figure 1.SF.3. Commodity Prices and Economic Activity: First Principal Components (Detrended data)**



Sources: IMF, Primary Commodity Price System; Markit/Haver Analytics; and IMF staff calculations.  
 Note: MSCI = MSCI indices of stock prices; PMI = purchasing managers' indices.

**Figure 1.SF.4. Energy Prices, Oil Price Prospects**



Sources: Bloomberg, L.P.; IMF, Primary Commodity Price System; and IMF staff estimates.  
<sup>1</sup>APSP = average petroleum spot price; BTU = British thermal unit.  
<sup>2</sup>Derived from prices of futures options on March 12, 2013.

However, there are a number of risks to the outlook of falling commodity prices—beyond those of weaker or stronger growth in the global economy and, more specifically, in emerging markets. Upside risks to prices appear more pronounced than downside risks. On the supply side, a return of problems that affected metal and energy markets in the past decade (accidents, project delays, shortages of equipment and skilled labor) could again lead to supply deficits and higher prices. Much stronger Chinese demand, for both domestic consumption and restocking, is an added risk. Additional concerns include geopolitical tensions in the oil-producing regions of the Middle East and Africa and further non-OPEC supply outages or a major supply shock. For agricultural commodities, weather is the key variable, and continued adverse growing conditions could result in higher prices for grains, especially corn, whose stock levels are historically low. Downside price risks center on resurgent supplies of energy and metals, including the larger-than-expected growth in production of shale gas and tight oil in the United States and current metal supply overhangs.

### Energy Market Developments and Prospects

Although energy prices rose by only 1 percent in 2012, they are up 15 percent since June 2012, led by gains in oil (19 percent) and U.S. natural gas (35 percent)—the latter on stronger demand for natural gas for power generation (which displaced coal) and depressed drilling for natural gas because of low prices (Figure 1.SF.4, panel 1). Natural gas prices continue to diverge regionally, with market segmentation driven by whether gas prices are strongly linked to long-term oil-priced contracts (yes in Japan, no in the United States) or whether this linkage has been loosened (Europe). Liquefied natural gas (LNG) prices in Japan eased as demand moderated after the surge that accompanied the shutdown of nuclear power generation in the wake of the Fukushima disaster, but prices remain high. European natural gas prices also fell on weaker demand and increasing penetration of spot-priced gas supplies.

Energy prices are expected to decline during 2013, as reflected in futures prices, led by crude oil (Figure 1.SF.4, panel 2). Falling crude oil prices reflect expected increases in non-OPEC production and declining demand in industrial countries due to improved vehicle efficiency and the effects of higher prices. However, the natural gas price index is expected to edge higher, led by a 34 percent increase in U.S. gas

prices that will help sustain robust shale gas development. LNG prices in Japan are expected to continue their decline in the face of lower demand as nuclear power generation comes back on line and as oil prices fall. Coal prices are expected to decline on increasing supply and moderating demand, in part due to environmental constraints. Risks to energy prices, however, are tilted to the upside.

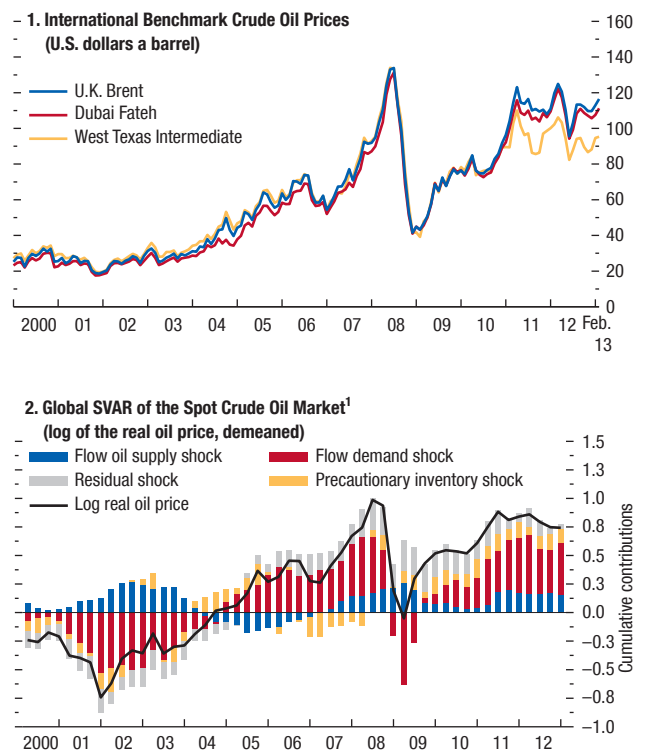
## Oil

**Spot crude prices:** Crude oil prices have remained relatively stable—albeit high—since early 2011, with the average selling price near \$105 a barrel during the past two years (Figure 1.SF.5, panel 1). Prices have been supported by outages due to geopolitical events in several countries in the Middle East and Africa, the European Union oil embargo and U.S. sanctions against Iran, and other unexpected outages, such as in the North Sea. The price of West Texas Intermediate (WTI) fell substantially below U.K. Brent because of a buildup in crude oil in the United States, primarily from new tight-oil production in North Dakota and Texas but also from rising Canadian oil imports. Pipeline constraints limit the movement of these supplies to refineries on the Gulf Coast and elsewhere, and producers are shipping crude oil by rail and barge, which is economical because of the large price discount. New pipeline projects and reversals of existing pipelines are under way, which will eventually lead to a narrowing of the Brent-WTI spread.

**Price drivers:** Weaker aggregate demand (proxied by the log change in global industrial production) and declines in other demand components (that is, inventories), along with a positive oil supply response, explain the downward pressure on the spot crude oil price during the second and third quarters of 2012 (Figure 1.SF.5, panel 2). However, the spot price began to pick up during the fourth quarter, as OPEC supply fell and geopolitical tensions rose, leading to a buildup in precautionary demand (inventories). Recent IMF staff analysis suggests that both supply and (flow and precautionary) demand shocks have been important drivers of the spot oil price (Beidas-Strom and Pescatori, forthcoming).

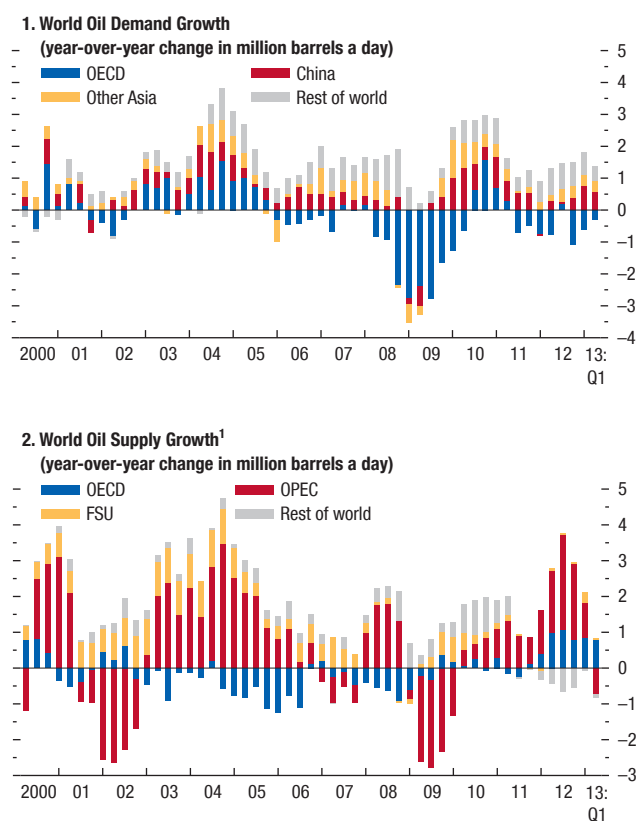
**Demand:** World oil demand grew by 1 percent, or 0.9 million barrels a day (mbd), in 2012, with a decline of 0.6 mbd in the Organization for Economic Cooperation and Development (OECD) countries and growth of 1.5 mbd in non-OECD countries (Figure 1.SF.6, panel 1). Oil demand in the OECD has fallen by 9 percent (or 4.5 mbd) since 2005 as a result of higher prices, greater

Figure 1.SF.5. Crude Oil Prices and SVAR<sup>1</sup> Model



Sources: IMF, Primary Commodity Price System; and Beidas-Strom and Pescatori (forthcoming).

<sup>1</sup>SVAR = structural vector autoregression.

**Figure 1.SF.6. Oil Market Developments**

Sources: International Energy Agency; and IMF staff estimates.  
 Note: OECD = Organization for Economic Cooperation and Development. 2013:Q1 are staff estimates.  
<sup>1</sup>OPEC = Organization of the Petroleum Exporting Countries; FSU = former Soviet Union.

efficiency, and recession—factors that are expected to affect developments into 2013 and beyond. While emerging market demand has moderated from its rapid growth in recent years, demand picked up by 1.6 mbd during the second half of 2012, led by Brazil, China, and countries in the Middle East and Asia. These emerging market economies are expected to account for all the growth in global demand in 2013, which is projected to be little more than 0.8 mbd.

*Supply:* World oil supply grew by 2.5 mbd in 2012, well above demand, resulting in more than 1 mbd going into inventories (Figure 1.SF.6, panel 2). The bulk of the increase was from OPEC (1.9 mbd), with the largest increments being the rebound in production from Libya, followed by rising output in Saudi Arabia and Iraq. However, OPEC supply fell during the fourth quarter, led by declines in Saudi Arabia, outages in Nigeria, and the continued impact of sanctions and embargoes on Iran. OPEC remains concerned about weak demand and rising supply and has announced its desire to keep oil prices around \$100 a barrel, which generally satisfies its relatively high break-even requirements. Non-OPEC supply grew by 0.6 mbd in 2012, led by increases in the United States and Canada and by smaller increments in China and Russia, which more than offset production losses in the other regions. Non-OPEC production is expected to increase by 1 mbd in 2013, slightly exceeding the growth in demand.

*Buffers:* Reflecting supply and demand developments during the fourth quarter of 2012 and estimates for the first quarter of 2013, there was a seasonal draw-down of inventories among OECD countries and an increase in OPEC spare capacity, albeit still below its historical average (Figure 1.SF.7).

### Food Market Developments and Prospects

*Prices:* Food prices have eased from recent highs on improving supply prospects, but markets remain tight due to historically low stock levels (Figure 1.SF.8). In addition, prices continue to be supported by high input prices that are transmitted through various channels, including fuel, fertilizer, and biofuel.<sup>7</sup> Cereal prices have edged downward from record highs in 2012 that were caused by significantly lower corn

<sup>7</sup>Fuel for agricultural machinery and transportation is a significant portion of production costs, and fertilizers also have a significant energy cost component. Biofuel production raises aggregate demand for crops and is diverted away from food supplies.

and wheat output resulting from extreme heat in the United States and drought in eastern Europe and central Asia. Oilseed and edible oil prices fell by a greater amount on better supply outlooks for South American soybean production and east Asian palm oil. Rice prices have been relatively stable during the past three years as markets remained well supplied.

*Outlook:* Food prices are projected to moderate but are likely to remain elevated in the first half of 2013 due to tight supplies—especially for corn, soybeans, and wheat (Figure 1.SF9, panel 1). The probability of extreme price fluctuations over the nine-month horizon has picked up for corn and wheat since the October 2012 *World Economic Outlook*, indicating that the upside price risks have risen slightly (Figure 1.SF9, panel 2). Contributing to these upside price risks are low inventories, adverse weather conditions, potential policy responses to tight markets (for example, export bans), and higher-than-expected oil prices. In addition, increases in biofuel production could divert crops away from food uses.<sup>8</sup>

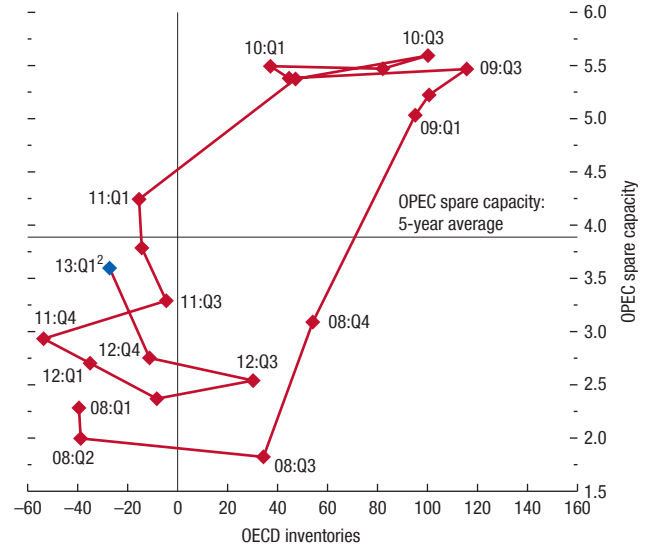
Meanwhile, the upside price risks for soybeans have abated, but downside price risks have emerged.

*Market balance:* Amid expectations that global growth will rebound slightly in 2013, growth in food demand is expected to remain robust (Figure 1.SF9, panel 3). Emerging market economies, especially China, are the largest source of increased demand for major crops. Although supply conditions have improved following the disruptions of 2012, inventories are not expected to be fully replenished. Overall, current global food stock-to-use ratios remain low, and they are estimated to fall below both 2012 and historical levels for most major grains and oilseeds in 2013 (Figure 1.SF9, panel 4).

*Major crops:* Corn is particularly vulnerable to supply shocks because it has the lowest stock-to-use ratio among major food crops. Growing conditions in Brazil appear favorable, and, as a result, soybean yields are projected to rise. However, crop-producing areas of Argentina face reduced yield prospects relative to market expectations despite a significant improvement this year, because heavy rains delayed planting and dryness threatens corn and soybean harvests. Until there is more certainty about production prospects in the United States—the largest producer of both crops—prices are unlikely to ease significantly. Lending support to further corn and soybean market tightness are ethanol

<sup>8</sup>The impact of higher biofuel production on food prices is not straightforward, but depends on technological progress, policy decisions, and other factors.

**Figure 1.SF.7. Oil Market Buffers<sup>1</sup>**  
(Data from January 2008–January 2013)

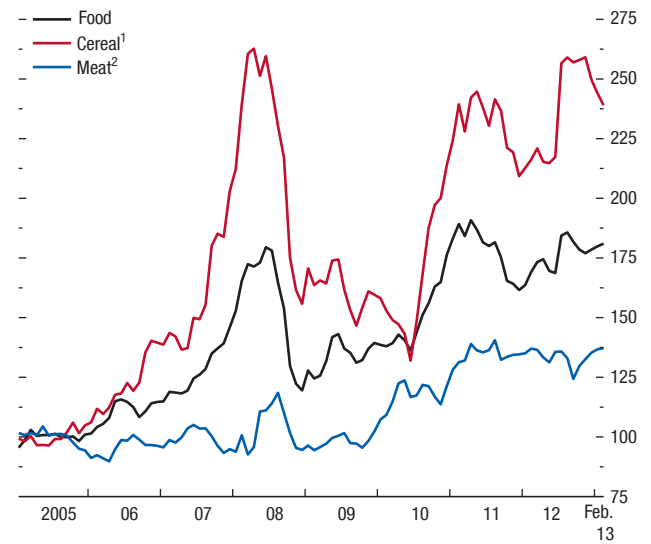


Sources: International Energy Agency; U.S. Energy Information Administration; and IMF staff estimates.

<sup>1</sup>Organization for Economic Cooperation and Development (OECD) stocks, deviations from five-year average (million barrels) on x-axis; Organization of the Petroleum Exporting Countries (OPEC) effective spare capacity (million barrels a day) on y-axis (excluding Iraq and Nigeria for the entire time period, Venezuela through February 2012, Libya since November 2011, and Iran since March 2012).

<sup>2</sup>March spare capacity and February/March stocks are estimates.

**Figure 1.SF.8. IMF Food Price Indices**  
(2005 = 100)

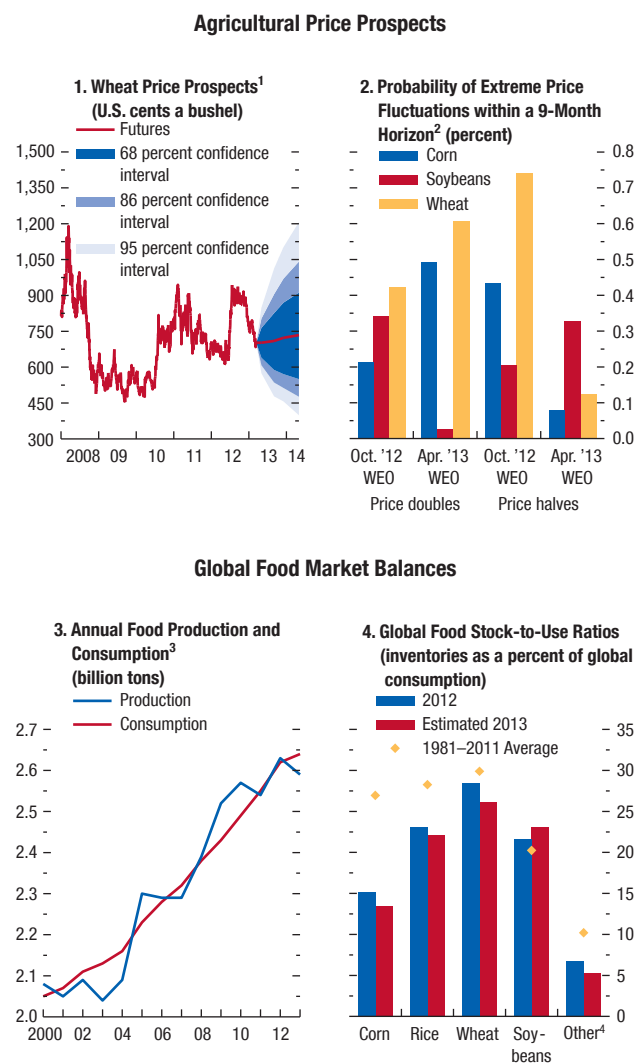


Source: IMF, Primary Commodity Price System.

<sup>1</sup>A weighted average of wheat, corn, rice, and barley.

<sup>2</sup>A weighted average of beef, lamb, pork, and poultry.

**Figure 1.SF.9. Food Prices and Inventories**



Sources: Bloomberg, L.P.; United States Department of Agriculture; and IMF staff estimates.  
<sup>1</sup>Derived from prices of futures options on March 12, 2013.  
<sup>2</sup>Derived from prices of futures options on September 11, 2012, and March 12, 2013.  
<sup>3</sup>Sum of major grains and oilseeds: barley, corn, millet, rice, rye, sorghum, wheat, palm kernel, rapeseed, soybean, and sunflower seed.  
<sup>4</sup>Other = other grains and oilseeds: barley, millet, palm kernel, rapeseed, rye, sorghum, and sunflower seed.

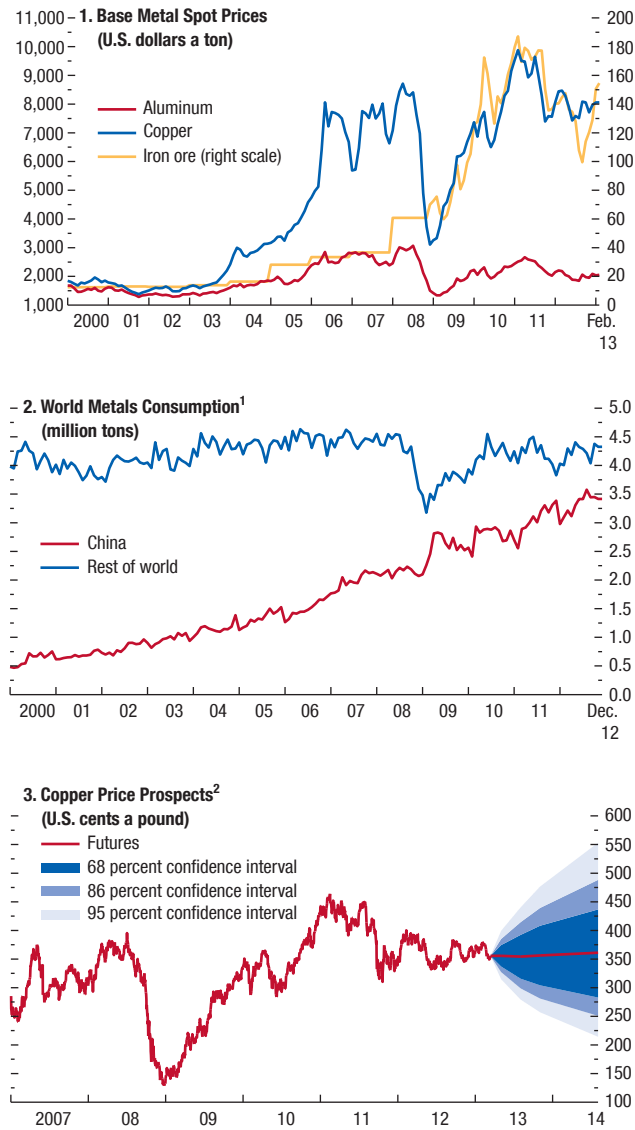
and biodiesel production. Although their output and consumption waned in 2012, both are expected to rebound strongly by the end of this year. Among key grains, *wheat* production is expected to underperform consumption by the greatest percentage this year, which puts pressure on already declining global stocks. In contrast, the *rice* market appears adequately supplied, and 2013 production is projected to reach record-high levels and broadly align with global demand needs.

**Metal Market Developments and Prospects**

*Prices:* Metal prices have generally declined since early 2011—following large restocking in China and a sharp increase in stocks—due to slowing consumption and weak import demand in China (Figure 1.SF.10, panels 1 and 2). However, prices picked up during the fourth quarter of 2012 and into early 2013 on improving macroeconomic sentiment. For some metals (such as copper), prices remain elevated as supply continues to struggle; for other metals (such as aluminum), prices have recently moved into the upper portion of the industry cost curve, so downside price risks are much lower. Aluminum prices have remained relatively low during the past decade because of large investments in aluminum smelters (in China and the Middle East). Nonetheless, the current market remains somewhat tight: warehouse financing arrangements have kept a large portion of inventories unavailable to the market.

*Outlook:* The outlook for metal prices is tightly bound to developments in China, which consumes more than 40 percent of all metals. Growth in China’s metal demand is expected to moderate as the economy moves more toward services. China still has plans for large infrastructure projects, which will lead to upside risks to prices (Figure 1.SF.10, panel 3). Reliance on metal futures prices, however, is not without important caveats—their predictive ability appears to have declined (Chinn and Coibion, forthcoming). For example, from 2009 to 2010, copper prices rose more than 100 percent, yet 12-month futures predicted a price increase of only 3 percent during the same period. Other metal commodities, such as lead, nickel, and tin, displayed similar patterns. In contrast, oil and natural gas futures prices were much more reliable predictors of actual price changes in these markets during the same period. Figure 1.SF.11 shows the decline in the predictive ability of futures prices and the increase in their volatility across commodity markets.

**Figure 1.SF.10. Metals: Prices, Demand, and Prospects**

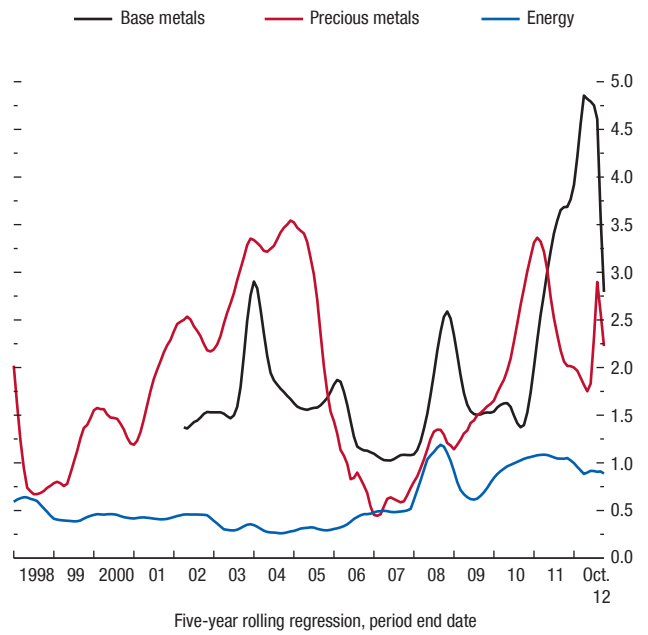


Sources: Bloomberg, L.P.; IMF, Primary Commodity Price System; World Bureau of Metal Statistics; and IMF staff estimates.

<sup>1</sup>Aluminum, copper, lead, nickel, tin, zinc.

<sup>2</sup>Derived from prices of futures options on March 12, 2013.

**Figure 1.SF.11. Predictive Content of Commodity Futures Prices**  
*(Average deviation from unbiasedness of futures prices)*



Sources: Bloomberg, L.P.; and Chinn and Coibion (forthcoming).

### Box 1.1. The Great Divergence of Policies

The current global recovery has followed an unusual path compared with the three previous global recoveries.<sup>1</sup> Specifically, the recovery following the Great Recession exhibits two types of divergences. The first is the sharp divergence of activity across advanced and emerging market economies, which we first noted in the April 2012 *World Economic Outlook* and that has continued since then.<sup>2</sup> The second is the great divergence of monetary and fiscal policies, which has become increasingly pronounced during the past two years. This box first presents a brief review of the former divergence and then provides a detailed account of the latter one.

#### Sharp Divergence of Activity

Overall, the ongoing global recovery has followed the pattern of recoveries in the past (Figure 1.1.1). But this global development masks a sharp divergence between the ongoing recovery paths for advanced and emerging market economies. Specifically, this recovery has been the weakest for advanced economies and the strongest for emerging markets. The advanced economies were the engine of previous global recoveries, but emerging markets account for the lion's share of the ongoing recovery. In light of the current forecasts, the sharp divergence of activity between advanced and emerging market economies is likely to persist in the coming years.

#### Great Divergence of Policies

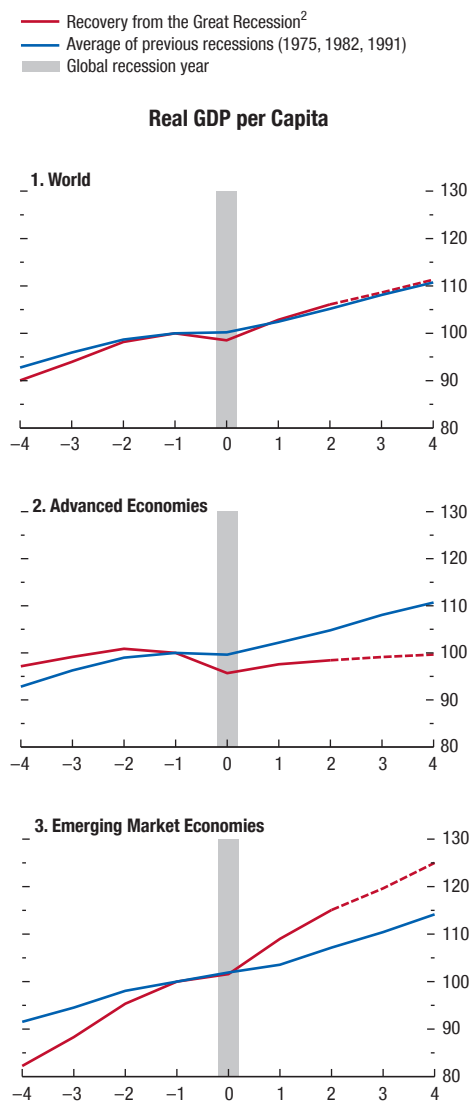
The second unique feature of this recovery has been the substantially different paths of fiscal and monetary policies, mainly in advanced economies. In particular, whereas the directions of fiscal and monetary policies were aligned in previous episodes, during the current recovery these policies have marched in opposite directions. Because the focus is on the cyclical properties of fiscal and monetary policies, we use specific measures

The authors of this box are M. Ayhan Kose, Prakash Loungani, and Marco E. Terrones. Ezgi Ozturk, Bennet Voorhees, and Tingyun Chen provided research assistance.

<sup>1</sup>This box focuses on the recovery episodes that followed the four global recessions the world economy experienced over the past half century: 1975, 1982, 1991, and 2009. A global recession is a decline in world per capita real GDP accompanied by a broad decline in other indicators of global activity—specifically, industrial production, trade, capital flows, oil consumption, and employment. A global recovery is a rebound in worldwide activity over the three or four years following a global recession. A detailed discussion of global recessions and recoveries is presented in Kose, Loungani, and Terrones (2013).

<sup>2</sup>See Box 1.2 of the April 2012 *World Economic Outlook*.

**Figure 1.1.1. Divergent Recoveries<sup>1</sup>**  
(Years on x-axis; indexed to 100 in the year before the global recession)



Source: IMF staff estimates.  
<sup>1</sup>Aggregates are purchasing-power-parity weighted.  
<sup>2</sup>Dashed lines denote WEO forecasts.

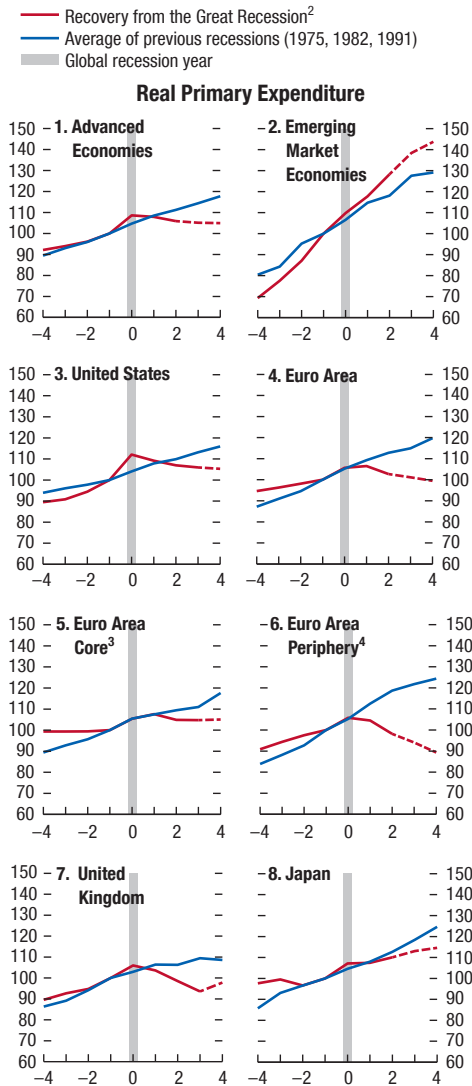
for policies (that is, real primary government expenditure, short-term interest rate, and the rate of growth of central bank assets) that provide a good reading of the cyclical policy stance (Kaminsky, Reinhart, and Végh, 2005). Other indicators (such as the ratio of government deficits to GDP and real short-term interest rates) often lead to noisy signals about the stance of policies.



Box 1.1 (continued)

**Figure 1.1.2. Government Expenditures during Global Recessions and Recoveries<sup>1</sup>**

(Years from global recession on x-axis; indices = 100 in the year before the global recession)



Sources: IMF, Public Finances in Modern History database; World Bank, World Development Indicators database; and IMF staff estimates.

<sup>1</sup>Aggregates are purchasing-power-parity weighted.

<sup>2</sup>Dashed lines denote WEO forecasts.

<sup>3</sup>France and Germany.

<sup>4</sup>Greece, Ireland, Italy, Portugal, Spain.

With regard to fiscal policy, the current and projected paths of government expenditures in the advanced economies are quite different than during past recoveries, when policy was decisively expansionary, with increases in real primary government expenditures. In some advanced economies, especially in the United States, the fiscal stimulus introduced at the outset of the financial crisis was far larger than during earlier recessions. However, the stimulus was unwound early in the ensuing recovery. Specifically, expenditures fell during the first two years of this global recovery and are projected to continue to decline modestly in the coming years (Figure 1.1.2).

This pattern also holds across the major advanced economies, with the euro area and the United Kingdom showing sharp departures from the typical paths of government expenditures in the past.<sup>3</sup> In contrast, in the emerging market economies the ongoing recovery has been accompanied by a more expansionary fiscal policy stance than during past episodes. This was possible because these economies had stronger fiscal positions this time around than in the past.

Monetary policies in the advanced economies have been exceptionally accommodative during the latest recovery compared with earlier episodes (Figure 1.1.3). In particular, policy rates have been reduced to record-low levels and central bank balance sheets in the major advanced economies have been dramatically expanded compared with earlier episodes (Figure 1.1.4). Monetary policy in emerging market economies has also been more supportive of economic activity than in the past.

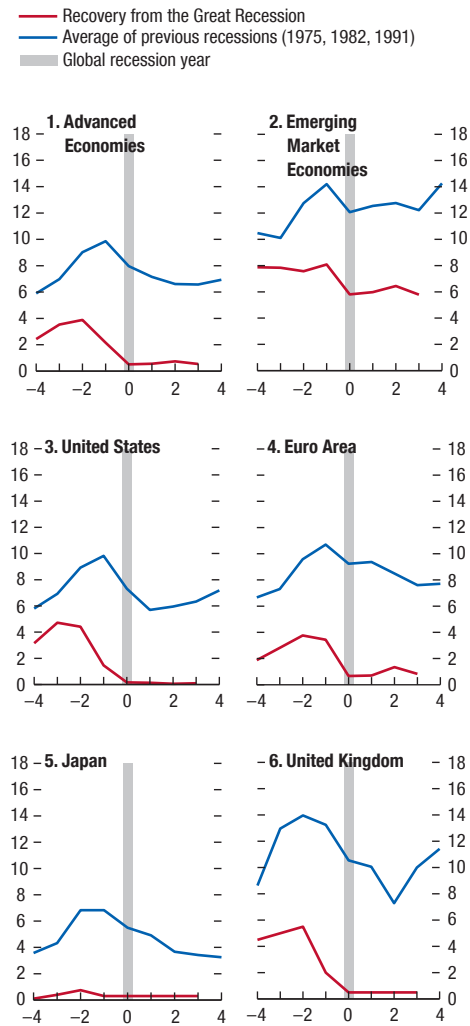
*What Explains the Divergence of Policies?*

Caution about fiscal stimulus and the pace of consolidation in this recession and recovery are likely explained by high ratios of public debt to GDP and large deficits. Advanced economies entered the Great Recession with much higher levels of debt than in past recessions (Figure 1.1.5). The high debt levels reflect a combination of factors, including expansionary fiscal policies in the run-up to the recession, financial sector support measures, and substantial revenue losses resulting from the severity of the Great Recession. The deficit levels in some advanced economies are currently

<sup>3</sup>We report the average of the three previous episodes here for simplicity, but the general pattern described by the average is valid for each episode as well (Kose, Loungani, and Terrones, 2013). The findings with respect to primary expenditures do not change much when the periphery euro area countries are excluded from the sample of advanced economies.

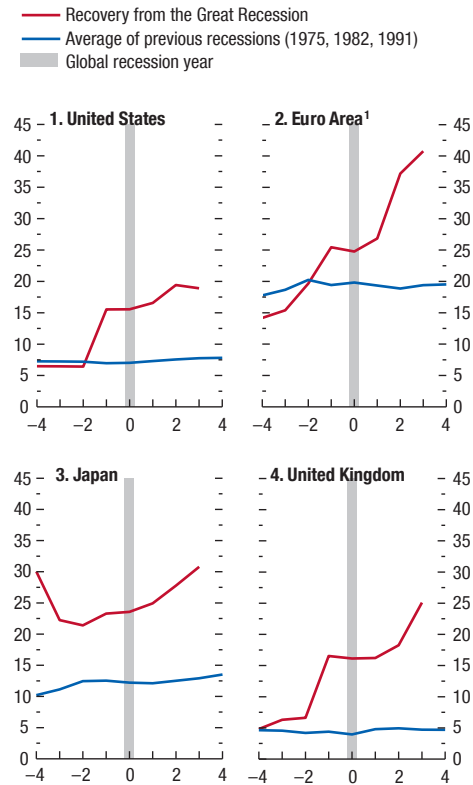
Box 1.1 (continued)

**Figure 1.1.3. Short-Term Interest Rates during Global Recessions and Recoveries<sup>1</sup>**  
(Percent; years from global recession on x-axis)



Sources: Haver Analytics; IMF, *International Financial Statistics*; and IMF staff calculations.  
<sup>1</sup>Aggregates are market weighted by GDP in U.S. dollars; observations are dropped for countries experiencing inflation 50 percent greater than in the previous year. Policy rate used as the principal series. Three- or four-month treasury bill data used as a proxy if data series was longer.

**Figure 1.1.4. Central Bank Assets in Major Advanced Economies during Global Recessions and Recoveries**  
(Percent of real GDP of year before global recession; years from global recession on x-axis)



Sources: Bank of England; Eurostat; Haver Analytics; IMF, *International Financial Statistics*; World Bank, World Development Indicators database; and IMF staff calculations.  
<sup>1</sup>Aggregate is market weighted by GDP in U.S. dollars. Data unavailable before 1975.

**Box 1.1 (continued)**

large in part because of the collapse in revenues. Moreover, sovereign debt crises in some euro area periphery countries and challenges associated with market access put pressure on these economies to accelerate their fiscal consolidation plans.<sup>4</sup> At the same time, there was more room for monetary policy maneuvering because inflation rates were much lower at the beginning of the recession than in the past (Figure 1.1.6).

The evidence presented here does not in itself permit an assessment of whether the different policy mix in this recession and recovery was appropriate.<sup>5</sup> The response of policies may have been reasonable given the respective room available for fiscal and monetary policies in advanced economies. But there are also

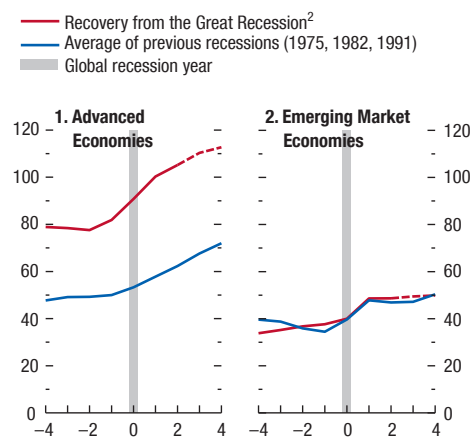
<sup>4</sup>Structural reforms—for example, reforms of labor, goods, and product markets—for the crisis countries are also critical for regaining competitiveness and even for moving up in the value chain.

<sup>5</sup>There is extensive literature on the factors behind the sluggish recovery in advanced economies. Some studies argue that recoveries following financial disruptions tend to be weaker and protracted; others emphasize the importance of relatively higher levels of macroeconomic and policy uncertainty (see, for details, Reinhart and Rogoff, 2009; Claessens, Kose, and Terrones, 2012; Bloom, Kose, and Terrones, 2013).

concerns. Even though monetary policy has been effective, policymakers had to resort to unconventional measures. Even with these measures, the zero bound on interest rates and the extent of financial disruption during the crisis have lowered the traction of monetary policy. This, together with the extent of slack in these economies, may have amplified the impact of contractionary fiscal policies.<sup>6</sup> Four years into a weak recovery, policymakers may therefore need to worry about the risk of overburdening monetary policy because it is being relied on to deliver more than it traditionally has.

<sup>6</sup>A large amount of literature analyzes the effectiveness of fiscal and monetary policies under these circumstances. For the effectiveness of fiscal policies, see Blanchard and Leigh (2013); Christiano, Eichenbaum, and Rebelo (2011); and Auerbach and Gorodnichenko (2012). For the effectiveness of monetary policies, see Eggertsson and Woodford (2003); Krishnamurthy and Vissing-Jorgensen (2011); Carvalho, Eusipe, and Grisse (2012); and Swanson and Williams (2013), among others. Some argue that accommodative monetary policies need to be paired with expansionary fiscal policies, especially for countries with sufficient fiscal space (Corsetti, 2012; De Grauwe and Ji, 2013; Werning, 2012; Turner, 2013; McCulley and Pozsar, 2012).

**Figure 1.1.5. Public-Debt-to-GDP Ratios during Global Recessions and Recoveries<sup>1</sup>**  
(Percent of real GDP in year before global recession; years from global recession on x-axis)

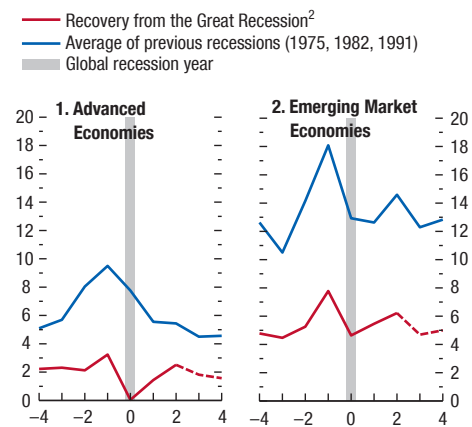


Sources: IMF, Public Finances in Modern History database; World Bank, World Development Indicators database; and IMF staff estimates.

<sup>1</sup>Aggregates are market weighted by GDP in U.S. dollars.

<sup>2</sup>Dashed lines denote WEO forecasts.

**Figure 1.1.6. Inflation during Global Recessions and Recoveries<sup>1</sup>**  
(Percent; years from global recession on x-axis)



Source: IMF staff estimates.

<sup>1</sup>Aggregates are market weighted by GDP in U.S. dollars. Observations are dropped for countries experiencing inflation 50 percent greater than in the previous year.

<sup>2</sup>Dashed lines denote WEO forecasts.

## Box 1.2. Public Debt Overhang and Private Sector Performance

In some advanced economies, the rapid growth of public debt along with sluggish economic performance could reflect the play of debt overhang mechanisms. The literature on debt overhang posits that larger debt stocks lead to lower activity and reduce the probability that debt will be repaid in full; beyond a particular threshold, further increases in nominal debt can actually reduce the total expected (present value of) debt payments (Myers, 1977; Krugman, 1988). Conversely, on the downward slope of this so-called debt Laffer curve—when the value of debt decreases its face value—debt restructuring can benefit both debtors and creditors.

### *The Effects of High Debt on Economic Activity*

A debt overhang can affect economic activity in various ways. High debt payments can lead to lower public investment, which may, in turn, lead to declining private investment.<sup>1</sup> High debt can reduce the scope for countercyclical fiscal policies, thereby increasing volatility and constraining private sector activity. Furthermore, high debt may diminish the government's incentives to enact growth-enhancing stabilization and policy reforms, because gains will go to service foreign debt. As the risk of distortionary taxation on profit, capital income, and assets increases, high debt can generally discourage private saving and investment. This, again, adversely affects growth and worsens the debt overhang.

Much of the empirical work on debt overhangs seeks to identify the “overhang threshold,” beyond which the correlation between debt and growth becomes negative. The results are broadly similar: above a threshold of about 95 percent of GDP, a 10 percentage point increase in the ratio of debt to GDP is associated with a decline in annual growth of about 0.15 to 0.20 percentage point a year (Kumar and Woo, 2010; Caner, Grennes, and Koehler-Geib, 2010; Cecchetti, Mohanty, and Zampolli, 2011; Ursua and Wilson, 2012).

But there are limits to empirical studies on the economic effects of debt overhangs. For example, countries that have high debt levels may have low

The main author of this box is Romain Ranciere with research assistance from Bennet Voorhees and Tingyun Chen.

<sup>1</sup>Clements, Bhattacharya, and Nguyen (2003) find that for low-income countries, every percentage point of GDP increase in debt service leads to public investment declines of about 0.2 percentage point of GDP.

growth for other reasons that typically are not captured in the econometric models. In fact, some studies find no causal relationship between high debt and lower growth. The October 2012 *Global Financial Stability Report* finds that countries with debt above 100 percent of GDP experience lower growth, but it also finds that countries with high but falling debt ratios grew faster than countries with lower but increasing debt ratios. Estimates that define the ranges beyond which debt becomes a problem often include large confidence intervals, typically between 10 and 15 percentage points around threshold estimates. And most cross-country regression studies do not directly model the channels through which public sector debt affects economic growth.

### *The Effects of High Debt in Ireland and Greece*

This box acknowledges that a rise in public debt does not affect all segments of the economy similarly and uses microeconomic data to obtain evidence on the channels through which a debt overhang can work. Specifically, it explores the transmission channels for the fiscal and sovereign stress risks associated with high debt levels in two euro area periphery economies, Ireland and Greece.<sup>2</sup> Faced with a rapid increase in public debt, firms may expect higher future taxation, lower government expenditures, and other costs, including those related to possible sovereign default. In anticipation of such costs, their market valuation falls. Conversely, debt restructuring could show up in improved firm performance and rising market valuations. In contrast with the existing literature, the objective of this analysis is not to assess the impact of changes in aggregate debt on aggregate growth, but rather to shed light on the potential distributional effects across sectors in the economy.

Large-scale financial sector bailouts by governments and sovereign debt restructuring offer a quasi-natural experiment for the study of this channel. The former typically involve large value transfers from governments to banks, including their foreign creditors, and the latter entail the opposite when banks have large holdings of restructured government securities on their books. The analysis focuses on the announcement of two such events: the financial sector bailout in Ireland on September 29, 2008, and the debt restructuring

<sup>2</sup>The results are based on Imbs and Ranciere (2012), which includes findings for a larger set of European countries.

**Box 1.2 (continued)**

in Greece on February, 21, 2012. Both events marked large changes in sovereign debt.<sup>3</sup> For both events, we analyze cumulative abnormal stock returns of firms, as in the following model:

$$R_{i,t} = \alpha_i + \beta_i RM_t + \sum_{\tau=t_1}^{t_1+2} \delta_{\tau} D_{\tau,t} + \varepsilon_{i,t}, \quad (1.2.1)$$

in which  $\alpha_i$  is a firm-specific intercept,  $R_{i,t}$  denotes the stock return of firm  $i$  at time  $t$ ,  $RM_t$  is the overall stock market return at time  $t$  for either Ireland or Greece, and  $D_{\tau,t}$  is an event-time indicator variable that takes value 1 at time  $t_1$ , when the bailout or restructuring is announced, and during the two days that follow. Specifically, we report the cumulative abnormal returns of the three-day period—that is, the sum of the estimates for  $\delta_{\tau}$ .<sup>4</sup> Notice that this approach does not consider abnormal returns in anticipation of these two events.<sup>5</sup>

We consider three subsets of firms to see how the events affected different segments of the economy: financial firms; domestic firms, defined as firms with no foreign assets (Greece) or with less than 20 percent foreign assets (Ireland); and firms operating in sectors for which government demand accounts for at least 10 percent of sales.<sup>6</sup>

Figure 1.2.1 for Ireland and Figure 1.2.2 for Greece report the point estimates for the cumulative abnormal returns, along with the 95 percent confidence intervals, for the three subsets.

In Ireland, the overall stock returns decline by 3.7 percent during the three-day window, whereas the overall world stock returns decline by only 1.7 percent in the same period. In principle, a bank bailout should be helping the economy in the short term.

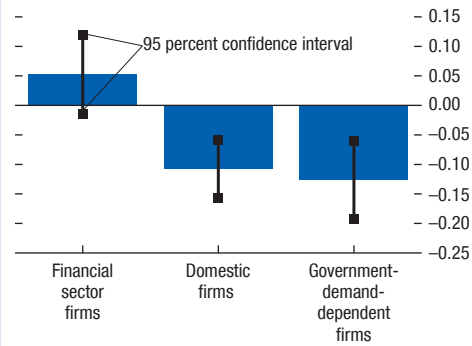
<sup>3</sup>The fiscal cost associated with the Irish bailout amounts to 41 percent of GDP, and the ratio of debt to GDP increased from 24 percent in 2007 to 65 percent in 2009 (Laeven and Valencia, 2012). The Greek debt restructuring, completed in March 2012, cut about half of Greek public debt owed to private creditors. The IMF projects the Greek debt-to-GDP ratio to be reduced from 174 percent in 2012 to 120 percent in 2013.

<sup>4</sup>The differential impact of the bailout or restructuring announcement across different subsets of firms is captured through interaction terms.

<sup>5</sup>The results are virtually unchanged when the world stock market return is added as a second factor in equation 1.2.1.

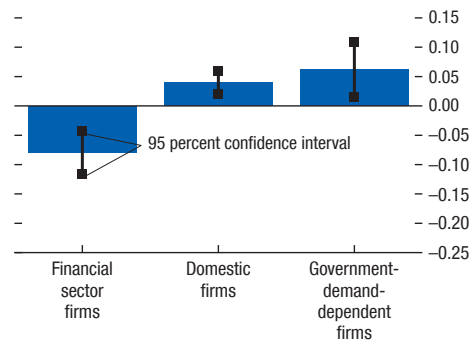
<sup>6</sup>Reflecting the Irish economy's high degree of financial openness, foreign assets account for more than 20 percent of total assets for 75 percent of listed firms in Ireland (for which information on foreign asset holdings is available). In Greece, by contrast, 75 percent of listed firms have less than 20 percent of foreign assets, justifying a threshold of zero.

**Figure 1.2.1. Cumulative Abnormal Returns of Irish Listed Firms during the 2009 Bank Bailout**  
(Percent; September 29–October 1, 2008)



Source: IMF staff estimates.

**Figure 1.2.2. Cumulative Abnormal Returns of Greek Listed Firms during the 2012 Debt Restructuring**  
(Percent; February 23–25, 2012)



Source: IMF staff estimates.

In this case, however, the bailout involved assumption by the government of large amounts of liabilities to foreigners, and the effect differed widely across firms. Firms in the financial sector exhibit positive abnormal returns (although not significantly different from zero). For them, any expectation of future higher taxation appears to be offset by the immediate benefits of the bailout. Domestic firms and firms dependent on government demand, however, experience strongly negative abnormal returns. This suggests that the unexpected increase in public debt adversely affected the private sector in the short term through both the taxation and the demand channels.

**Box 1.2 (continued)**

In Greece, the overall stock market returns decline by 1.3 percent during the three-day window, whereas the world stock returns do not change during the period. The response likely reflects that the restructuring was widely anticipated or that a debt overhang persisted even after the restructuring. Financial firms face a large and significantly negative, cumulative, abnormal return, probably related to their large holdings of government debt. Domestic firms exhibit positive abnormal returns, which were slightly higher than for the market overall. Firms dependent on government demand show even more positive abnormal returns, suggesting that debt

restructuring eases the demand channel.

Finally, although this methodology allows identification of the distributional impact of bailout and debt restructuring across sectors, it cannot identify the aggregate impact of changes in government debt on long-term economic growth.

This analysis suggests that the fiscal and sovereign default risk overhang channel may have been at play in Ireland and Greece. Transfers of future and current liabilities between the private sector and the government as well as across various sectors are central to understanding how this channel operates.

**Box 1.3. The Evolution of Current Account Deficits in the Euro Area**

This box reviews the various factors that led to rising external deficits and their macroeconomic implications in Greece, Ireland, Portugal, and Spain (Figure 1.3.1, panel 1).<sup>1</sup> Its main conclusion is that deficits widened on account of booming imports in some countries, falling transfers in others, and deteriorating income payments in all. Exports did not substantially weaken between 2000 and 2007, but, going forward, gains in export performance will be needed as these economies recover toward full employment.

A commonly held view is that the deteriorating current account deficits in the euro area periphery were caused by a deterioration in export performance. The pattern of continually worsening current account balances—from deficits that were already high with the adoption of the euro—and deterioration of conventional price competitiveness measures are superficially consistent with this view (Figure 1.3.1, panels 2 and 3). Deteriorating export performance can reflect wages that grow faster than productivity in the tradables sector, implying rising unit labor costs and appreciation of the real effective exchange rate. An alternative explanation is that these economies' export performance faded because they failed to move up the value chain while their trading partners steadily increased the quality of their exports.<sup>2</sup>

In fact, exports (as a share of GDP) for most periphery economies remained relatively stable or increased during the first decade of the 2000s. Moreover, market shares for merchandise exports were flat in these countries during that period (Figure 1.3.1, panels 4 and 5).<sup>3</sup> This occurred against the backdrop of different developments in the tradables sector, in which unit labor costs were contained, and the nontradables sectors, in which they were not. It was the increasing unit labor costs in the latter that led to the widely observed deterioration in economy-wide unit labor costs (Figure 1.3.1, panel 6). Therefore,

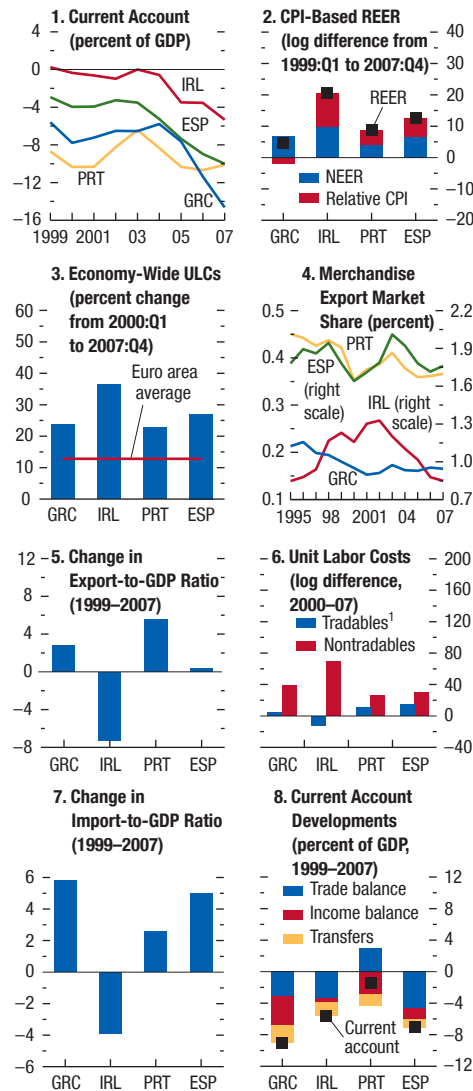
The authors of this box are Joong Shik Kang and Jay Shambaugh, with research assistance from Bennet Voorhees and Tingyun Chen. See Kang and Shambaugh (forthcoming) for more detailed discussion.

<sup>1</sup>This box focuses on these four euro area member countries, which, as of the end of 2007, had the largest precrisis current account deficits.

<sup>2</sup>See Chen, Milesi-Ferretti, and Tressel (2012) for a detailed discussion.

<sup>3</sup>Ireland's merchandise trade market share declined while that in services trade increased with its shift toward greater reliance on services in the first decade of the 2000s (Nkusu, 2013).

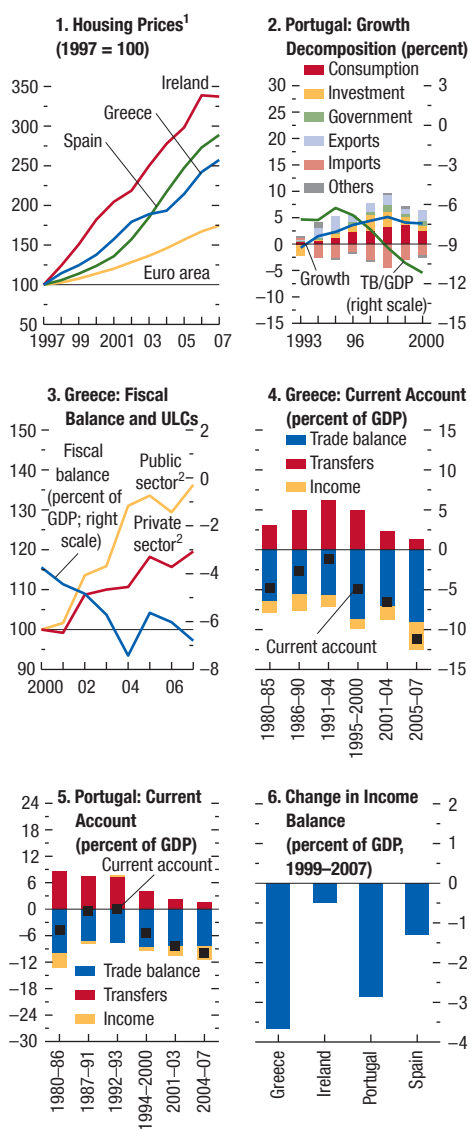
**Figure 1.3.1. Precrisis Developments in Europe**



Sources: Eurostat; Haver Analytics; and IMF staff calculations. Note: CPI = consumer price index; REER = real effective exchange rate; NEER = nominal effective exchange rate; ULCs = unit labor costs; GRC = Greece; IRL = Ireland; PRT = Portugal; ESP = Spain. <sup>1</sup>Tradables sectors include agriculture; forestry and fishing; industry excluding construction, trade, travel, accommodation, and food; information and communications; and financial insurance.

Box 1.3 (continued)

Figure 1.3.2. Different Paths to Large Current Account Deficits



Sources: Eurostat; Haver Analytics; and IMF staff calculations.  
Note: ULCs = unit labor costs; TB/GDP = trade balance as percent of GDP.  
<sup>1</sup>Free housing price index for Spain, prices of dwellings in urban areas for Greece, and prices of dwellings countrywide for Ireland and euro area.  
<sup>2</sup>2000 = 100, left scale.

the deterioration of current account balances was more likely caused by rising imports or nontrade factors (Figure 1.3.1, panels 7 and 8).<sup>4</sup> Rising imports played a role in widening external imbalances in some countries, driven to varying degrees by these factors: domestic demand booms caused by capital inflows, excessive optimism about the future, or fiscal excesses. Booms driven by capital inflows and low interest rates boosted output, raised unit labor costs in the nontradables sectors, and led to housing bubbles in Ireland, Greece, and Spain (Figure 1.3.2, panel 1). Optimism about higher growth in the future led to a strong pickup in consumption and investment and contributed to higher unit labor costs and growth, particularly in Greece and Portugal in the mid-1990s (Figure 1.3.2, panel 2).<sup>5</sup> Large fiscal deficits contributed to a widening current account deficit in the run-up to the crisis in Greece but not in the other countries (Figure 1.3.2, panels 3 and 4).

Changes in nontrade factors also added to external imbalances. In particular, transfers declined, but rather than leading to a reduction in domestic demand and a return to balanced trade, they were replaced by loans (perhaps because of habit persistence). Accordingly, the trade deficits reflect the fact that consumption and imports did not decline with declining income. This was the case in both Greece and Portugal and was part of a persistent failure to correct imbalances that were present at the adoption of the euro. (Trade deficits have been large for more than 30 years.) In addition, in all the periphery economies, deteriorating external imbalances led to rising net income payments, which further added to the imbalances. Interestingly, Portugal's trade balance actually remained relatively stable during this period (Figure 1.3.2, panel 5). Nevertheless, by running persistent current account deficits, Portugal—like the other periphery economies—faced rising net income payments to support growing external debt (Figure 1.3.2, panel 6).

Since the crisis, price-based indicators of competitiveness have improved, though not yet to pre-1999 levels, and current account deficits have shrunk. Part of this improvement is cyclical and part of it is structural, but it is not easy to disentangle the two. A large part of the improvement in current account balances

<sup>4</sup>Gaulier and Vicard (2012) also argue that weakening export performance did not generate the imbalances.  
<sup>5</sup>Lane and Pels (2012) demonstrate that the current account balance declined in countries with rising growth forecasts.

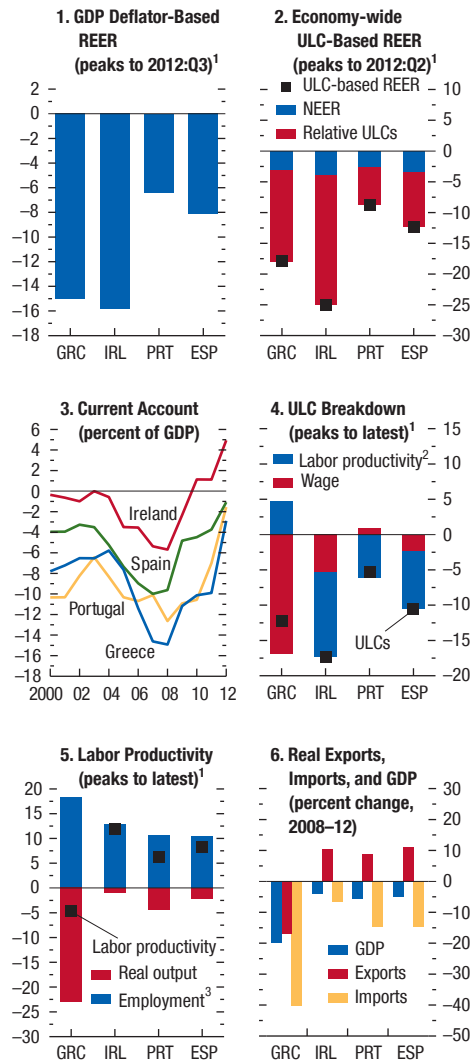


**Box 1.3 (continued)**

has been due to import contraction (Figure 1.3.3, panels 1–4). Also, improvements in unit labor costs have been largely due to labor shedding—unemployment is very high, output stands appreciably below potential (Figure 1.3.3, panels 5 and 6). Conversely, the unwinding of unsustainable demand booms has contributed to import contraction—and thus may in part be sustainable—and, regardless of cause, unit labor costs have improved. Still, sizable gains in export performance will be needed so that deficits do not reemerge as these countries recover toward full employment. This will come with improved competitiveness, and as these countries adjust, external support will help them offset their high net income payments. Finally, even though adjustments in relative prices may help boost competitiveness, it will be important to sustain the growth of nominal GDP in these countries to avoid compromising their ability to manage their high debt levels.<sup>6</sup>

<sup>6</sup>See Shambaugh (2012) for a more detailed discussion.

**Figure 1.3.3. Postcrisis Developments in Europe**



Sources: Eurostat; Haver Analytics; and IMF staff calculations.  
 Note: REER = real effective exchange rate; NEER = nominal effective exchange rate; ULCs = unit labor costs; GRC = Greece; IRL = Ireland; PRT = Portugal; ESP = Spain.  
<sup>1</sup>Peaks are 2009:Q4 for Greece, 2008:Q4 for Ireland, 2009:Q1 for Portugal, and 2009:Q2 for Spain (based on ULCs). Latest are 2012:Q3 for Ireland and 2012:Q4 for the others.  
<sup>2</sup>Negative sign indicates improvement in labor productivity.  
<sup>3</sup>Positive sign indicates decline in employment.

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