CHAPTER 1

GLOBAL PROSPECTS AND POLICIES

The global recovery has evolved better than expected, but in many economies the strength of the rebound has been moderate given the severity of the recession. In 2010, world output is expected to rise by about 4¼ percent, which represents an upward revision of 1 percentage point from the October 2009 World Economic Outlook *(WEO) and is similar to the January 2010* WEO Update*. Economies that are off to a strong start are likely to remain in the lead, as growth in others is held back by lasting damage to financial sectors and household balance sheets. Activity remains dependent on highly accommodative macroeconomic policies and is subject to downside risks, as room for countercyclical policy maneuvers has sharply diminished and fiscal fragilities have come to the fore. Monetary, fiscal, and financial policymakers will need to ensure a smooth transition of demand from the government to the private sector and from economies with excessive external deficits to those with excessive surpluses. In most advanced economies, fiscal and monetary policies should maintain a supportive thrust this year to further sustain growth and employment. But many of these economies also need to urgently adopt credible strategies to contain public debt and later bring it down to more prudent levels. Financial sector repair and reform are also high-priority requirements. Many emerging economies have resumed a high rate of growth and a number have begun to moderate their accommodative macroeconomic policies in the face of high capital inflows. Given prospects for relatively weak growth in the advanced economies, the challenge for emerging economies is to absorb these inflows and nurture domestic demand without triggering a new boom-bust cycle.*

Recovery Is Stronger than Expected, but Speed Varies

The recovery has been stronger than expected thus far, as confidence has picked up among consumers and businesses as well as in financial markets (Figure 1.1; Table 1.1). World real GDP growth reached about 3¼ percent on an annualized basis during the second quarter of 2009 and rose to over 4½ percent during the second half of the year. In advanced economies, a nascent turn in the inventory cycle and slowing deterioration (followed recently by improvements) in U.S. labor markets contributed to the positive developments, and strong orders and a recovering corporate bond market helped foster investment. In the key emerging and developing economies, final domestic demand was very strong, helped by the turn in the inventory cycle, and external demand was lifted by the normalization of global trade.

Global activity is recovering at varying speeds, tepidly in many of the advanced economies but solidly in most emerging and developing economies. The United States is off to a somewhat later but better start than Europe or Japan. This may be surprising, considering that the United States was the epicenter of the crisis and had an unusually large need to rebuild private savings. The stronger U.S. recovery may reflect a variety of differences between the United States and the euro area and Japan: fiscal stimulus was larger; the nonfinancial corporate sector is less reliant on bank credit, which remains constrained, whereas bond markets have staged a comeback;[1] nonfinancial corporate balance sheets are stronger and rapid restructuring has boosted productivity; and the Federal Reserve reacted earlier and with larger policy rate cuts to lower levels in real terms. In contrast, the large appreciation of the yen may have weighed on the recovery of Japan's exports, which fell sharply during the global trade slump, and the reemergence of deflation has pushed up real borrowing rates and wages. The euro area's trade links with troubled emerging European and Commonwealth of Independent States (CIS) economies and the euro's intermittent appreciation have curbed the euro area's exports. In addition, several euro area economies were hit particularly hard by the financial and real estate crises.

[1] Bank loans to nonfinancial corporations in the euro area are four to five times larger than bonds issued by these corporations; in the United States, bonds are a more important source of corporate funding.

Table 1.1. Overview of the *World Economic Outlook* Projections

(Percent change, unless otherwise noted)

	Year over Year						Q4 over Q4		
			Projections		Difference from January 2010 WEO Projections		Estimates	Projections	
	2008	2009	2010	2011	2010	2011	2009	2010	2011
World Output[1]	**3.0**	**–0.6**	**4.2**	**4.3**	**0.3**	**0.0**	**1.7**	**3.9**	**4.5**
Advanced Economies	**0.5**	**–3.2**	**2.3**	**2.4**	**0.2**	**0.0**	**–0.5**	**2.2**	**2.5**
United States	0.4	–2.4	3.1	2.6	0.4	0.2	0.1	2.8	2.4
Euro Area	0.6	–4.1	1.0	1.5	0.0	–0.1	–2.2	1.2	1.8
Germany	1.2	–5.0	1.2	1.7	–0.3	–0.2	–2.4	1.2	2.1
France	0.3	–2.2	1.5	1.8	0.1	0.1	–0.3	1.5	1.9
Italy	–1.3	–5.0	0.8	1.2	–0.2	–0.1	–3.0	1.4	1.3
Spain	0.9	–3.6	–0.4	0.9	0.2	0.0	–3.1	–0.1	1.8
Japan	–1.2	–5.2	1.9	2.0	0.2	–0.2	–1.4	1.6	2.3
United Kingdom	0.5	–4.9	1.3	2.5	0.0	–0.2	–3.1	2.3	2.6
Canada	0.4	–2.6	3.1	3.2	0.5	–0.4	–1.2	3.4	3.3
Other Advanced Economies	1.7	–1.1	3.7	3.9	0.4	0.3	3.2	2.8	4.4
Newly Industrialized Asian Economies	1.8	–0.9	5.2	4.9	0.4	0.2	6.1	3.4	5.9
Emerging and Developing Economies[2]	**6.1**	**2.4**	**6.3**	**6.5**	**0.3**	**0.2**	**5.2**	**6.3**	**7.3**
Central and Eastern Europe	3.0	–3.7	2.8	3.4	0.8	–0.3	1.9	1.3	4.1
Commonwealth of Independent States	5.5	–6.6	4.0	3.6	0.2	–0.4	. . .	. . .	. . .
Russia	5.6	–7.9	4.0	3.3	0.4	–0.1	–3.8	1.7	4.2
Excluding Russia	5.3	–3.5	3.9	4.5	–0.4	–0.6	. . .	. . .	. . .
Developing Asia	7.9	6.6	8.7	8.7	0.3	0.3	8.6	8.9	9.1
China	9.6	8.7	10.0	9.9	0.0	0.2	10.7	9.4	10.1
India	7.3	5.7	8.8	8.4	1.1	0.6	6.0	10.9	8.2
ASEAN-5[3]	4.7	1.7	5.4	5.6	0.7	0.3	5.0	4.2	6.2
Middle East and North Africa	5.1	2.4	4.5	4.8	0.0	0.1	. . .	. . .	. . .
Sub-Saharan Africa	5.5	2.1	4.7	5.9	0.4	0.4	. . .	. . .	. . .
Western Hemisphere	4.3	–1.8	4.0	4.0	0.3	0.2	. . .	. . .	. . .
Brazil	5.1	–0.2	5.5	4.1	0.8	0.4	4.3	4.2	4.2
Mexico	1.5	–6.5	4.2	4.5	0.2	–0.2	–2.4	2.3	5.5
Memorandum									
European Union	0.9	–4.1	1.0	1.8	0.0	–0.1	–2.2	1.3	2.0
World Growth Based on Market Exchange Rates	1.8	–2.0	3.2	3.4	0.2	0.0	. . .	. . .	. . .
World Trade Volume (goods and services)	**2.8**	**–10.7**	**7.0**	**6.1**	**1.2**	**–0.2**	**. . .**	**. . .**	**. . .**
Imports									
Advanced Economies	0.6	–12.0	5.4	4.6	–0.1	–0.9	. . .	. . .	. . .
Emerging and Developing Economies	8.5	–8.4	9.7	8.2	3.2	0.5	. . .	. . .	. . .
Exports									
Advanced Economies	1.9	–11.7	6.6	5.0	0.7	–0.6	. . .	. . .	. . .
Emerging and Developing Economies	4.0	–8.2	8.3	8.4	2.9	0.6	. . .	. . .	. . .
Commodity Prices (U.S. dollars)									
Oil[4]	36.4	–36.3	29.5	3.8	6.9	–4.1	. . .	. . .	. . .
Nonfuel (average based on world commodity export weights)	7.5	–18.7	13.9	–0.5	8.1	2.1	. . .	. . .	. . .
Consumer Prices									
Advanced Economies	3.4	0.1	1.5	1.4	0.2	–0.1	0.8	1.3	1.6
Emerging and Developing Economies[2]	9.2	5.2	6.2	4.7	0.0	0.1	4.9	5.8	4.0
London Interbank Offered Rate (percent)[5]									
On U.S. Dollar Deposits	3.0	1.1	0.5	1.7	–0.2	–0.1	. . .	. . .	. . .
On Euro Deposits	4.6	1.2	0.9	1.6	–0.4	–0.7	. . .	. . .	. . .
On Japanese Yen Deposits	1.0	0.7	0.6	0.7	0.0	0.0	. . .	. . .	. . .

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during February 23–March 23, 2010. Country weights used to construct aggregate growth rates for groups of economies were revised. When economies are not listed alphabetically, they are ordered on the basis of economic size.

[1]The quarterly estimates and projections account for 90 percent of the world purchasing-power-parity weights.

[2]The quarterly estimates and projections account for approximately 77 percent of the emerging and developing economies.

[3]Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

[4]Simple average of prices of U.K. Brent, Dubai, and West Texas Intermediate crude oil. The average price of oil in U.S. dollars a barrel was $61.78 in 2009; the assumed price based on future markets is $80.00 in 2010 and $83.00 in 2011.

[5]Six-month rate for the United States and Japan. Three-month rate for the Euro Area.

Activity in emerging and developing economies is leading the way (Figure 1.2). In key emerging Asian economies output already exceeds precrisis levels by a wide margin, and output growth, averaging about 10 percent during 2009:Q2–Q4, is outpacing estimates of full-capacity (potential) output growth. By the third quarter of 2009, growth began to exceed estimates of potential output in a number of Latin American economies too. However, production levels in this region have barely reached precrisis levels, and there is still economic slack in many countries. Recovery is lagging in a number of economies in emerging Europe and the CIS, although some are beginning to rebound strongly from deep troughs. Middle Eastern economies are benefiting from rising demand for oil and rising oil prices. Experience in sub-Saharan Africa is diverse. Most middle-income economies and oil exporters, which experienced sharp decelerations or contractions in output in 2009, are now recovering, supported by the rebound in global trade and commodity prices. In most low-income economies, output growth, after slowing in 2009, is now again close to trend rates.

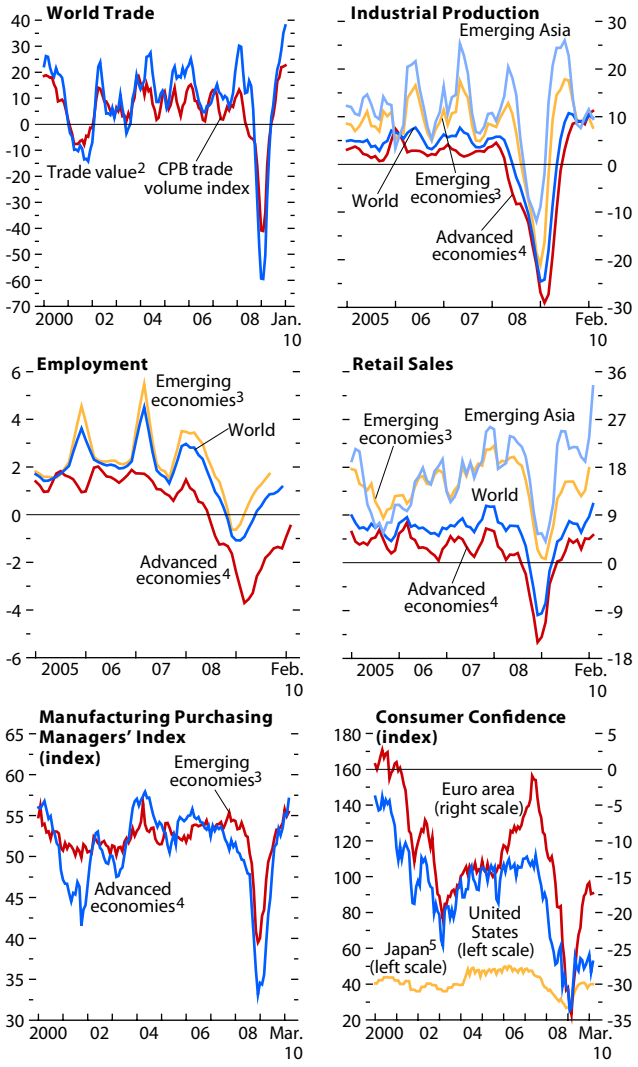
Financial Conditions Are Easing, but Not for All Sectors

Policy intervention on an unprecedented scale helped improve financial conditions and real activity (Figure 1.3). Money markets have stabilized, equity markets have rebounded, and the credit cycle may be turning up. In advanced economies, the tightening of bank lending standards is ending and credit appears to be bottoming out. For these economies, the April 2010 *Global Financial Stability Report* (GFSR) has also lowered its estimate of actual and prospective bank write-downs and loan loss provisions over 2007–10 from $2.8 trillion to $2.3 trillion, two-thirds of which had been recognized at the end of 2009. In China, credit and some asset markets are booming, to such an extent that the People's Bank of China has taken various measures to moderate the pace of lending, including raising the renminbi reserve requirement ratio for depository financial institutions (Figure 1.4). Credit is accelerating elsewhere in emerging Asia but is stabilizing in Latin America. In emerg-

Figure 1.1. Current and Forward-Looking Indicators[1]

(Annualized percent change of three-month moving average over previous three-month moving average unless noted otherwise)

Global activity has rebounded, as evidenced by accelerating world trade, industrial production, and retail sales. Employment continues to contract in advanced economies but is expanding again in emerging economies, helped by strong potential growth. Industrial confidence has returned to precrisis levels, but household confidence in advanced economies continues to lag, reflecting subdued employment.



Sources: Netherlands Bureau for Economic Policy Analysis for CPB trade volume index; for all others, Haver Analytics and NTC Economics; and IMF staff calculations.

[1]Not all economies are included in the regional aggregations. For some economies, monthly data are interpolated from quarterly series.

[2]In SDR terms.

[3]Argentina, Brazil, Bulgaria, Chile, China, Colombia, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, and Venezuela.

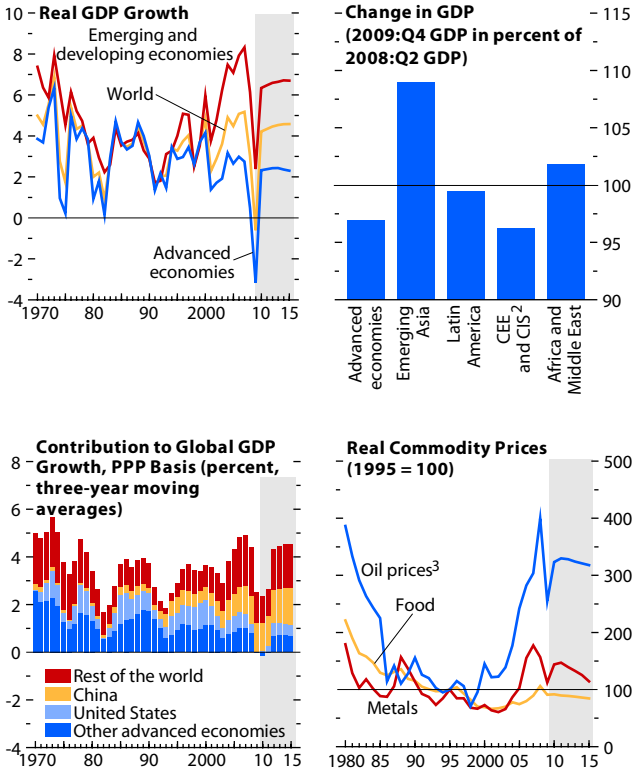
[4]Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong SAR, Israel, Japan, Korea, New Zealand, Norway, Singapore, Sweden, Switzerland, Taiwan Province of China, United Kingdom, and United States.

[5]Japan's consumer confidence data are based on a diffusion index, where values greater than 50 indicate improving confidence.

Figure 1.2. Global Indicators[1]

(Annual percent change unless noted otherwise)

Real GDP growth picked up starting in 2009:Q2. However, output in most regions of the world remains below or around precrisis levels. The exception is emerging Asia, which accounts for a growing share of world activity. Commodity prices have rebounded in response to expanding activity.



Source: IMF staff estimates.
[1]Shaded areas indicate IMF staff projections. Aggregates are computed on the basis of purchasing-power-parity (PPP) weights unless noted otherwise.
[2]CEE: central and eastern Europe; CIS: Commonwealth of Independent States.
[3]Simple average of spot prices of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil.

ing Europe, credit continues to contract but at a decelerating pace.

Nevertheless, financial conditions remain more difficult than before the crisis, especially in advanced economies. In a few advanced economies, rising public deficits and debt have contributed to a sharp increase in sovereign risk premiums, creating spillovers into other economies and markets. At the same time, constraints on bank capital and sluggish nonfinancial credit growth continue to impair the supply of credit, and buoyant corporate bond issues have not taken up the slack. Bank capital is likely to remain a constraint, especially in Europe, as banks seek to lower their leverage multiples. Deleveraging needs in the U.S. banking sector are lower but still significant for regional banks. In general, sectors that have only limited access to capital markets—consumers and small and medium-size enterprises—are likely to continue to face tight limits on their borrowing. So far, public lending programs and guarantees have been vital in channeling credit to these sectors.

Capital Is Again Flowing to Emerging Economies

Together with real and financial activity, cross-border financial flows from advanced to emerging economies have picked up, primarily reflecting a recovery from deep retrenchment in 2008 (Figure 1.4). Both equity and bond flows have accelerated since the end of 2008, although syndicated loan issuance remains below precrisis levels. The growth in cross-border flows has come mostly from outside the banking sector, as banks continue to retrench their balance sheets. Key drivers behind the renewed capital flows include rapid growth in emerging economies, large yield differentials in their favor, and returning appetite for risk. The renewed flows have eased financial conditions in many emerging economies and prompted some authorities to be watchful of increasing property prices, in some cases taking measures to rein in domestic credit growth. Thus far, evidence for broader asset price overvaluation is limited, according to the April 2010 GFSR.

The recovery of cross-border flows has come with some real effective exchange rate changes—

depreciation of the U.S. dollar and appreciation of floating currencies of some other advanced and emerging economies—but compared with pre-crisis levels, changes have generally been limited (Figures 1.5 and 1.6). There are exceptions. The economies in the Middle East saw some significant appreciation, those in emerging Europe some significant depreciation, and the Japanese yen appreciated significantly. These changes were generally in line with the medium-term fundamentals for these economies. However, currencies of a number of emerging Asian economies remain undervalued, substantially in the case of the renminbi, and the U.S. dollar and euro remain on the strong side relative to medium-term fundamentals.

The concomitant narrowing of global current account imbalances has a significant temporary component. Among the major economies, the current account surplus of China fell from about 9½ percent of GDP in 2008 to 5¾ percent of GDP in 2009, reflecting the slump in global manufacturing and trade but also a steep rise in public spending. Over the same period, the deficit of the United States fell from about 5 percent of GDP to about 3 percent, as household savings rose and investment slumped. Both economies benefited from lower oil prices, which in turn reduced the large surpluses of Middle Eastern economies. However, IMF staff estimates suggest that current account imbalances will rise noticeably as global trade continues to recover, financing improves, and commodity prices stabilize at higher levels (Figure 1.6).

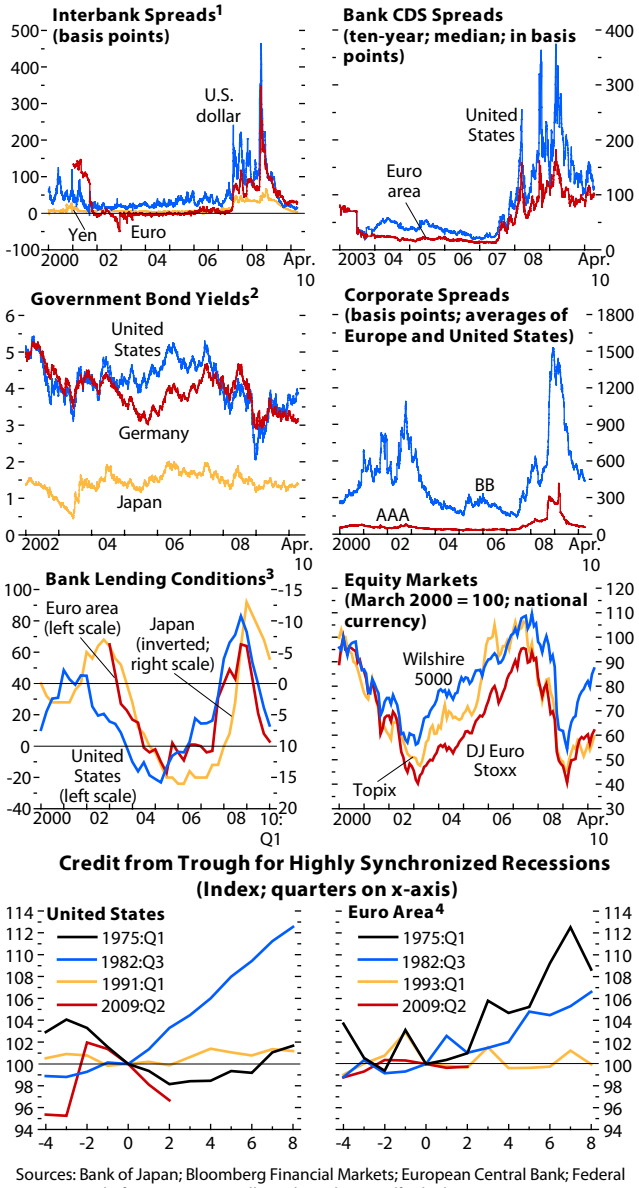
Policy Support Has Been Essential in Fostering Recovery

Extraordinary policy intervention since the crisis has all but eliminated the risk of a second Great Depression, laying the foundation for recovery. The interventions were essential to prevent a downward debt-deflation spiral, in which increasingly severe difficulties would have fed back and forth between the financial system and the rest of the economy.

- Fiscal policy provided major support in response to the deep downturn, especially in advanced economies. At the same time, the slump in activity and, to a much lesser extent, stimulus measures

Figure 1.3. Developments in Mature Credit Markets

Financial conditions in advanced economies have improved noticeably, as evidenced by declining interbank, credit default swap (CDS), and corporate spreads and recoveries in equity markets. The tightening of bank lending conditions is coming to an end, suggesting a nascent turn in the credit cycle. The decline in bank credit has been large relative to most recessions.



Sources: Bank of Japan; Bloomberg Financial Markets; European Central Bank; Federal Reserve Board of Governors; Merrill Lynch; and IMF staff calculations.

[1]Three-month London interbank offered rate minus three-month government bill rate.

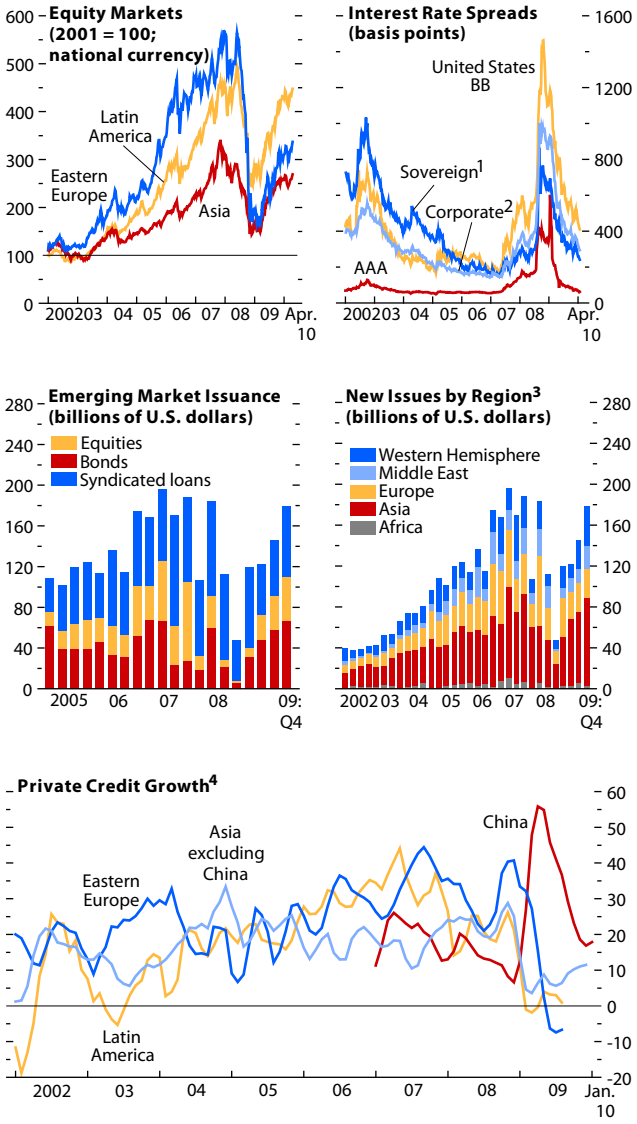
[2]Ten-year government bonds.

[3]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 enterprises for the euro area; average of surveys on changes in credit standards for commercial/industrial and commercial real estate lending for the United States; diffusion index of "accommodative" minus "severe," Tankan survey of lending attitude of financial institutions for Japan.

[4]Euro area consists of France, Germany, and Italy.

Figure 1.4. Emerging Market Conditions

Financial conditions have improved markedly in many emerging markets. Equity markets have staged a strong rebound, interest rate spreads have come down, and new issues are up. Private credit growth, however, continues to contract or move sideways in Latin America and emerging Europe.



Sources: Bloomberg Financial Markets; Capital Data; IMF, *International Financial Statistics;* and IMF staff calculations.
[1]JPMorgan EMBI Global Index spread.
[2]JPMorgan CEMBI Broad Index spread.
[3]Total of equity, syndicated loans, and international bond issues.
[4]Annualized percent change of three-month moving average over previous three-month moving average.

pushed fiscal deficits in advanced economies up to about 9 percent of GDP (Figure 1.7). Debt-to-GDP ratios in these economies are expected to exceed 100 percent of GDP in 2014 based on current policies, some 35 percentage points of GDP higher than before the crisis. The expected increases are mostly a result of declines in output and reduced tax payments as a result of lower asset prices and diminished financial sector activity; discretionary fiscal stimulus and direct support to the financial sector stemming from the crisis account for less than one-fifth of the debt increases.

- Monetary policy has been highly expansionary and has been supported by unconventional liquidity provision. Policy rates were brought down to record lows, close to zero in many advanced economies (Figure 1.8). Other exceptional measures include public commitments to keep interest rates low for an extended time, outright purchases of long-term government bonds to reduce longer-term yields, and support for dysfunctional markets (including for asset-backed securities). As a result, central bank balance sheets in some of the largest economies expanded rapidly until recently. Many central banks in emerging economies also introduced special liquidity or credit facilities, including to alleviate the acute global shortage of dollar funding.
- Government guarantees and capital injections for financial institutions have provided indispensable backing to the system.

Multispeed Recovery to Continue during 2010–11

Two factors underlying the stronger-than-expected start to the global recovery will continue to sustain growth during much of 2010, while the effect of fiscal stimulus gradually diminishes. The first is the better-than-expected state of financial markets, where public support is already being phased out. In particular, there are signs that credit is close to stabilizing, and the recovery of household wealth should provide continued support to consumption. The second is the inventory cycle: the large fall in global inventories, which resulted from the plunge in production during 2008:Q4–2009:Q1, is now slow-

ing or reversing. The fear of a new depression had triggered rapid destocking, with production quickly scaled back in anticipation of a major decline in consumption. With this decline averted, firms are now running down inventories at a much reduced pace or are rebuilding them. Under plausible scenarios, this process may continue through much of 2010.

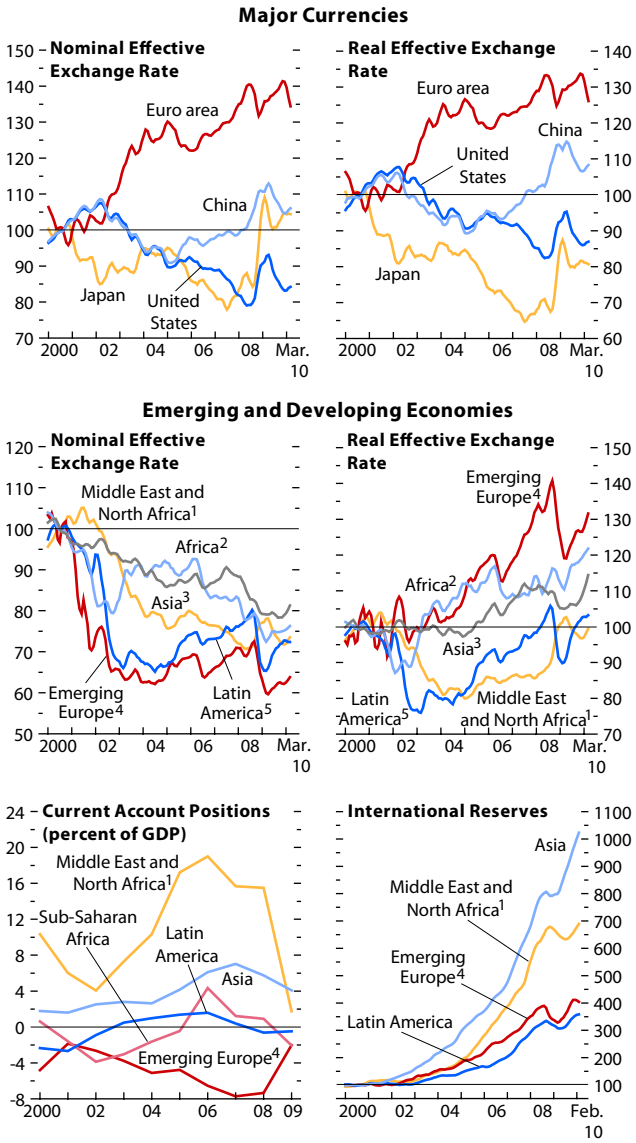
The next question is whether the stronger rebound in the inventory cycle is a harbinger of healthy recovery. For the major advanced economies, this is not expected to be true (Figure 1.9). In the United States, where destocking has been pronounced, inventory investment may add about 1 percentage point to GDP growth during 2010. In the euro area and Japan, the contribution from inventories is likely to be more limited, because the previous drawdown was less drastic than in the United States. Moreover, there are few other indications that private spending in these three economies will lead a strong recovery, given that credit will remain hard to come by for many agents, investment will be held back by low capacity utilization, and unemployment will weigh on consumption (see Chapter 3). In the meantime, public deficits will have to be scaled back. This is likely to dampen growth by cutting into incomes and thereby further reducing spending by liquidity-constrained consumers. It might also prompt households to scale back their expectations for future disposable income (including expected long-term returns on their assets) and to increase their precautionary saving. The extent to which this will diminish growth is hard to gauge; much will depend on the credibility and quality of fiscal adjustment.

For emerging economies the picture is more positive. Inventory investment is likely to make a significant contribution to growth in the short term, on account of prospects for improved demand in both advanced and emerging economies. With global trade rebounding, stocks must be rebuilt after the drawdown of 2008–09, just as in the advanced economies. Furthermore, countries such as Brazil, China, India, and Indonesia are already sustaining a strong rebound, even in the face of weak recovery in the advanced economies, quickly reattracting capital flows. This is because most emerging and developing economies did not suffer long-lasting shocks to their

Figure 1.5. External Developments

(Index, 2000 = 100; three-month moving average unless noted otherwise)

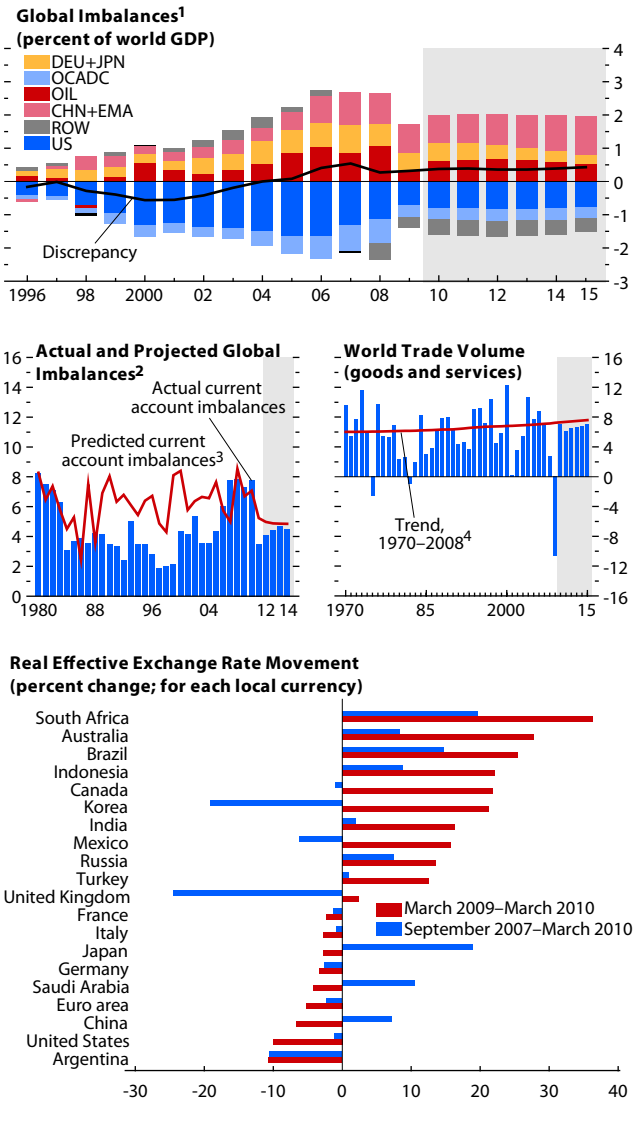
Although currencies have gyrated during the crisis, they have not moved much relative to precrisis levels, except in emerging Europe and the Middle East. Also, the Japanese yen appreciated significantly. Many emerging economies began to build up reserves, after financial stress started to ease in mid-2009.



Sources: IMF, *International Financial Statistics;* and IMF staff calculations.
[1]Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, United Arab Emirates, and Republic of Yemen.
[2]Botswana, Burkina Faso, Cameroon, Chad, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Ethiopia, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda, and Zambia.
[3]Asia excluding China.
[4]Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Turkey.
[5]Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

Figure 1.6. Global Imbalances

Current account surpluses and deficits narrowed as global trade declined and commodity prices fell. However, as the global economy recovers, imbalances are projected to grow again, but to remain lower than before the crisis. This is consistent with a drop in expected income growth in economies that ran excessive current account deficits before the crisis.



Source: IMF staff estimates.

[1]CHN+EMA: China, Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand; DEU+JPN: Germany and Japan; OCADC: Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Turkey, and United Kingdom; OIL: Oil exporters; ROW: rest of the world; US: United States.

[2]Measured as standard deviation of country-specific current accounts in G20 economies.

[3]Based on a 10-year rolling regression of global current account imbalance on world GDP growth and oil prices.

[4]Average growth rates for individual countries, aggregated using purchasing-power-parity weights; the aggregates shift over time in favor of faster-growing economies, giving the line an upward trend.

financial systems or large increases in unemployment rates, and many have been able to deploy sizable fiscal and monetary stimulus. This reflects a widespread strengthening of policy frameworks and institutions in response to earlier crises as well as accelerating potential growth, driven by market-oriented reforms.

Historically, sound domestic policies and strong underlying potential have provided a number of emerging and developing economies with some insulation against recessions in advanced economies (Figure 1.10). For example, Asian economies pulled through the deep recession of the early 1980s relatively well, helped by policy frameworks that improved their resilience to external shocks. The same was true for a broader range of emerging and developing economies following the 2001 recession in advanced economies. A positive feature for the present recovery is that most emerging economies did not have externally funded booms—exceptions being various emerging European and some CIS economies. Thus, the prospects for emerging and developing economies may be less dependent on those for advanced economies during the current recovery than in the wake of some past global recessions.

Overall, the world looks poised for further recovery at varying speeds across and within various regions (Figure 1.11; Table 1.1). Global growth is projected at about 4¼ percent in 2010 and 2011. For both advanced and emerging economies, the new forecast for 2010 has an upward revision to output of about 1 percentage point relative to the October 2009 WEO, but it is broadly similar to the January 2010 *WEO Update*; for 2011, the forecast is broadly unchanged relative to the two previous issues of the WEO. Advanced economies are now expected to expand by 2¼ percent in 2010, following a more than 3 percent decline in output in 2009, and by 2½ percent in 2011. Growth in emerging and developing economies is expected to be over 6¼ percent during 2010–11, following a modest 2½ percent in 2009.

The recovery under way in the major advanced economies will be relatively sluggish, both compared with recoveries following the major (but less deep) recessions of the mid-1970s, early 1980s, and early 1990s and compared with the recoveries forecast for many emerging economies. Several euro area economies that were hit particularly hard or have run out of macroeconomic policy room are

likely to lag behind their major peers. By contrast, Australia and the newly industrialized Asian economies are off to a strong start and will likely stay in the lead. The pace of recovery will also diverge significantly among emerging and developing economies: the Asian economies, which suffered less during the downturn, are leading the recovery—in terms of both smaller output gaps and higher growth rates—and are forecast to continue to do so. In sub-Saharan Africa, most economies are expected to stay close to their potential output growth rates. Recovery in the economies of emerging Europe and the CIS will continue to lag behind, with some exceptions.

In general, economies that are in the lead of recovery are likely to remain there. Conversely, those that experienced larger drops in output during the crisis will not necessarily experience stronger recoveries (Figure 1.9).[2] As Chapter 2 discusses in more depth, output developments are determined by many factors, a number of which have lasting consequences. These include the extent of damage to financial sectors, household balance sheets, and cross-border funding and the room available for policy maneuvers to combat recession.[3] Contrary to some perceptions, the type of exchange rate regime does not appear to have had a major impact on growth in this crisis (Box 1.1).

Inflation Pressures Are Generally Subdued but Diverge

The still-low levels of capacity utilization and well-anchored inflation expectations are expected to keep inflation low (Figure 1.12). The limited decline in inflation in many advanced economies is puzzling given the exceptionally large falls in output. Core inflation in the euro area has lately fallen under 1 percent, down from under 2 percent at the

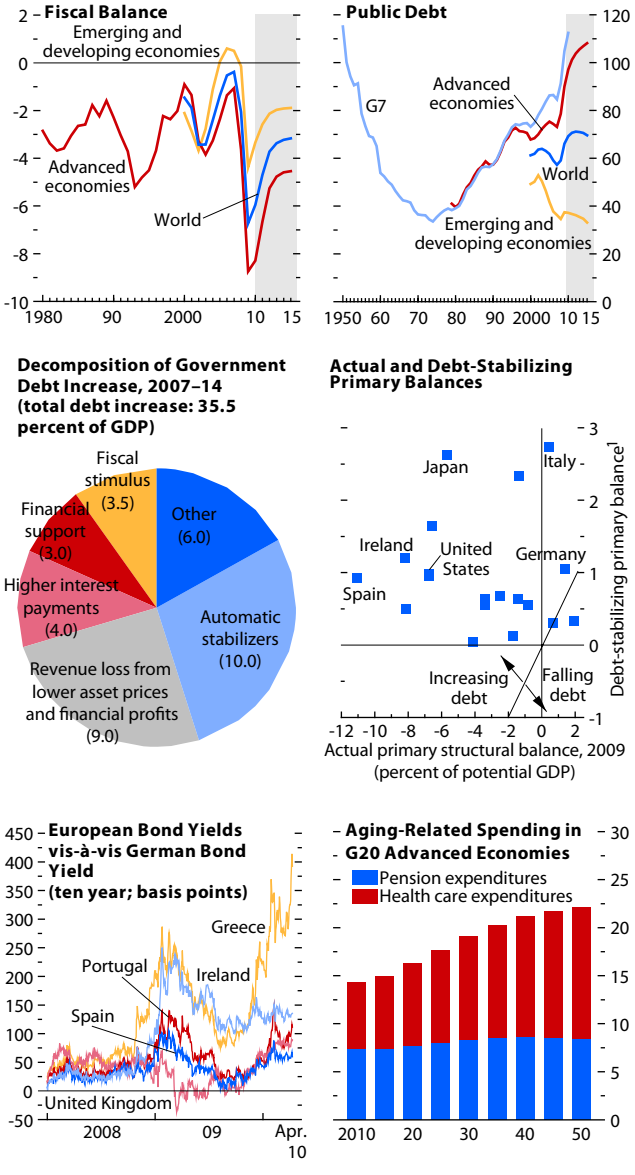
[2] The "Zarnowitz rule"—whereby deep recessions are followed by rapid recoveries—will generally not apply. For details on this rule, see Zarnowitz (1992).

[3] However, looking behind these regional groupings at country specifics, much is still not understood about what drove economic activity during this recession. For further discussion, see Berkmen and others (2009); Claessens and others (2010); and Blanchard, Faruqee, and Das (2010). On the lasting impact of financial shocks, see Cardarelli, Elekdag, and Lall (2009) and Chapter 3 of the April 2009 *World Economic Outlook*.

Figure 1.7. General Government Fiscal Balances and Public Debt

(Percent of GDP unless noted otherwise)

Fiscal balances have deteriorated, mainly because of falling revenue resulting from decreased real and financial activity. Fiscal stimulus has played a major role in stabilizing output but has contributed little to increases in public debt, which are especially large in advanced economies. Most advanced economies need to lower their deficits substantially to stabilize their debt-to-GDP ratios; some are experiencing growing financial market pressure to do so soon. However, all countries need to make significant progress over the coming decade: spending on aging populations will only make matters worse.



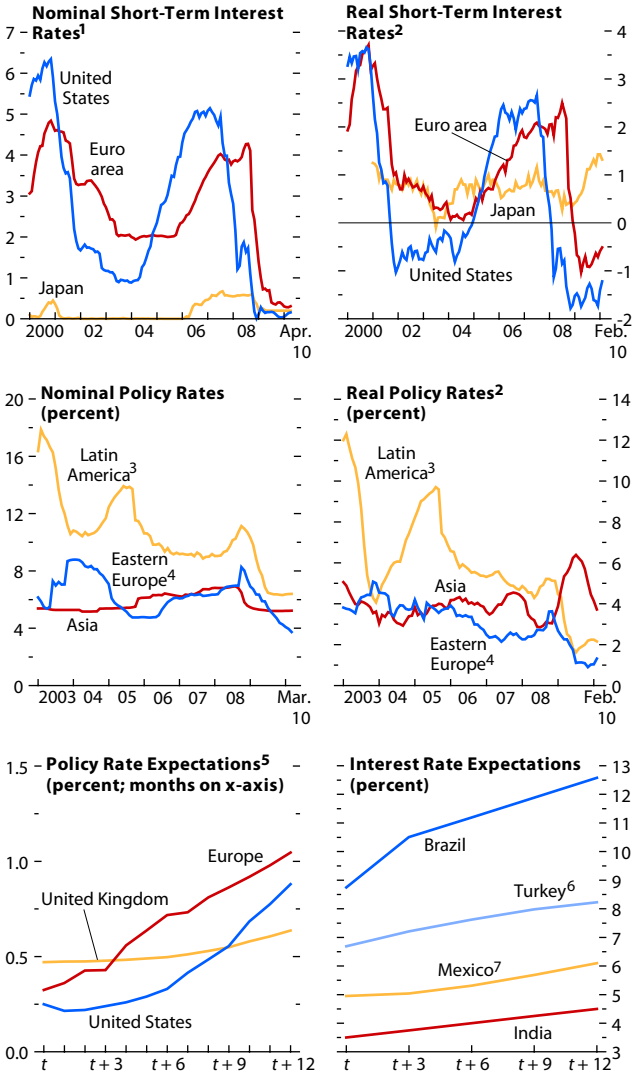
Sources: Country authorities; Datastream; European Commission (2009); Fiscal Monitor Database; Organization for Economic Cooperation and Development; and IMF staff estimates.

[1] Based on real GDP growth projected for 2008–14.

Figure 1.8. Measures of Monetary Policy and Liquidity in Selected Advanced Economies

(Interest rates in percent unless noted otherwise)

Policy rates were cut to near zero in major advanced economies and were brought down significantly in many emerging economies. Markets expect a prolonged period of very low rates for the advanced economies and some significant rate hikes in various emerging economies, which are seen to be closer to full capacity and subject to higher inflation risks.



Sources: Bloomberg Financial Markets; Eurostat; Haver Analytics; and IMF staff calculations.

[1]Three-month treasury bill.

[2]Relative to core inflation.

[3]Argentina, Brazil, Chile, Colombia, Mexico, and Peru.

[4]Bulgaria, Estonia, Hungary, Latvia, Lithuania, and Poland.

[5]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 12, 2010.

[6]Average ask/bid spread of the Turkish Lira Reference Interest Rate (TRLIBOR) as of April 12, 2010.

[7]Based on futures of 28-day interbank rates.

peak in 2008; in the United States it has been running about 1½ percent, down from somewhat over 2 percent; and in the United Kingdom it appears to have moved sideways (excluding the likely impact of one-time effects). In Japan, price dynamics turned appreciably from very low core inflation to negative inflation, which slightly exceeded 1 percent in February 2010. In general, the correlation between the drop in core inflation from its 2008 peaks and the increase in unemployment rates is weaker than during the 2001 recession (Figure 1.13). Beyond the fact that the financial crisis affected economies' potential output to differing degrees, various factors may explain this:

- Inflation expectations have generally remained well anchored, testifying to the credibility of accommodative monetary and fiscal policies as well as public support for financial repair.
- Nominal downward rigidities become more binding at very low inflation rates, slowing or inhibiting further falls.
- Labor hoarding—a reluctance to lay off existing employees even during the slowdown—may have raised unit labor costs.
- In the face of weak revenues and tight financial conditions, firms may resist lowering prices and margins in an effort to rebuild working capital.

Moreover, the strong cyclical position of key emerging economies—before and after the crisis—has limited the decline in inflation pressure at the global level. In particular, recovering demand (especially in Asia) provided a strong boost to commodity prices, which explains why excess capacity in commodity production and excess inventories for many commodities markets are both lower than usual for this stage of the global cycle (Figure 1.2; Appendix 1.1). In many emerging economies, inflation has been quite variable from year to year and has been higher than in the advanced economies. This pattern persists. In various Latin American, Middle Eastern, and CIS economies, inflation slowed but remained relatively high throughout the cycle, and in India it rose strongly. Inflation fell appreciably in Russia and moderately in Brazil; prices in China actually declined for a while but are now rising.

Looking ahead, in most advanced economies headline inflation rates should broadly converge to present

levels of core inflation as high unemployment discourages high wage settlements and energy prices remain stable or increase only modestly (Table 1.1)—March 2010 futures markets foresee only modest oil price increases, from $78.25 in 2010 to $82.50 in 2011, although prices have lately been somewhat higher. Risks for deflation remain pertinent in light of the weak outlook for GDP growth and persistent wide gaps between actual and potential output (Figure 1.13).

For emerging and developing economies, sustained increases in inflation are not projected during the recovery, although inflation is likely to remain quite variable wherever consumer prices are more sensitive to commodity prices.[4] Otherwise, significant upside inflation risks are confined to economies with a history of unstable price levels and to those that are growing strongly but have little excess productive capacity—including a number of emerging Asian economies and others for which markets are pricing in appreciable policy rate hikes during 2010 (Figure 1.8).

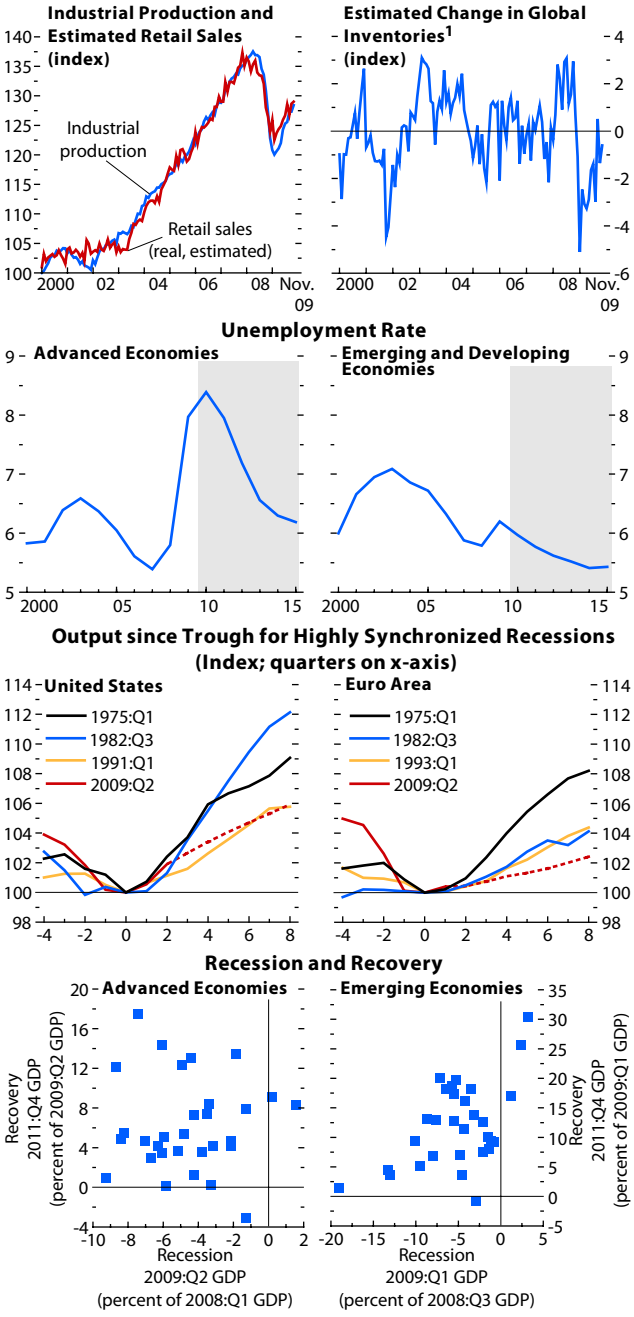
Important Risks Remain amid Sharply Diminished Room for Policy Maneuvers

The outlook for activity remains unusually uncertain. Risks are generally to the downside, and although a variety of risks have receded, downside risks related to the growth of public debt in advanced economies have become sharply more evident. The main concern is that room for policy maneuvers in many advanced economies has either been largely exhausted or has become much more limited, leaving these fragile recoveries exposed to new shocks. In addition, bank exposure to real estate continues to pose downside risks, mainly in the United States and parts of Europe. One upside risk that has diminished is that the potential for positive financial surprises is now lower, given the extent of the financial recovery that has already taken place. Even so, reduction in uncertainty may continue to foster a stronger-than-expected improvement in financial market sentiment and prompt a larger-than-expected rebound in capital flows, trade, and private demand. One downside risk that has diminished is that the systemic risks

[4] See Chapter 3 of the October 2008 *World Economic Outlook*.

Figure 1.9. Prospects for Near-Term Activity

Based on the historical relationship between global industrial production and retail sales, the global slowdown during 2008:Q4–2009:Q1 was significantly driven by inventory drawdowns. This process has now reversed and will help support growth during 2010. However, high unemployment in the advanced economies will limit demand, as will impaired financial systems. Output recovery will be sluggish by past standards. More generally, countries that suffered large slowdowns or contractions in activity during the crisis will not necessarily rebound quickly, because they are dealing with long-lasting shocks.

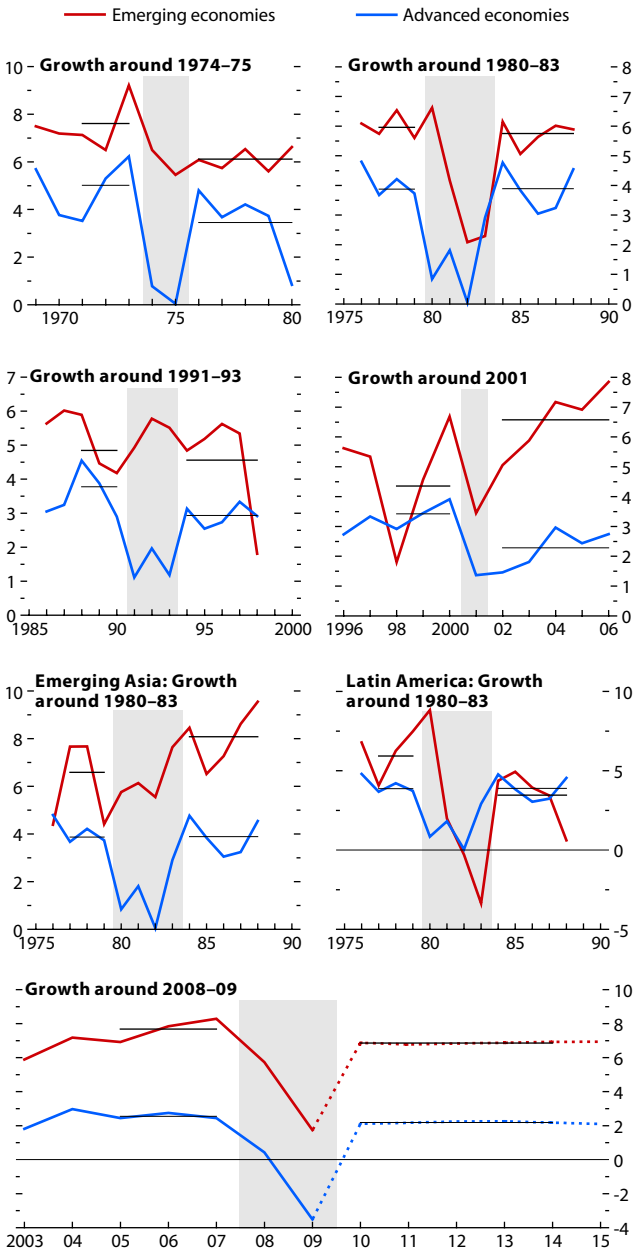


Source: IMF staff calculations.
[1] Based on deviations from an estimated (cointegration) relationship between global industrial production and retail sales.

Figure 1.10. Emerging Economies: GDP Growth by Recession Episode

(Percent change from one year earlier)

During recessions in advanced economies, output in emerging economies has varied, slowing down sharply during the early 1980s but holding up well during the 1990s and in 2001. Furthermore, developments have varied across countries. Following the recession of the early 1980s, output growth moved onto a higher trajectory in emerging Asia but dropped in Latin America. Following the 2001 recession, output growth remained strong in all emerging economies.



Source: World Economic Outlook database.

originating in the financial sector have fallen further as the recovery has become more robust.

The IMF staff's quantitative indicators broadly confirm these qualitative insights (Figure 1.14).[5] Specifically, risks as measured by falling dispersion in analysts' forecasts for real GDP growth have diminished but remain to the downside. Options prices on the S&P 500 indicate some upside risks from financial surprises, although these are now smaller than in October 2009. Concerns about upside surprises on inflation that may require earlier-than-expected monetary policy action have remained unchanged, judging by analysts' expectations. Term spread data point to broadly balanced risks to growth, as yield curves have steepened modestly since October 2009. Options prices for futures on petroleum and other commodities suggest small downside risks to growth from another commodity price spike in the near term—risks for sharp price increases are higher in the medium term, as spare capacity and inventory buffers diminish.

Sovereign risk premiums for some of the more fiscally vulnerable economies have again seen a steep increase, amid significant volatility (Figure 1.7). In the near term, the main risk is that, if unchecked, market concerns about sovereign liquidity and solvency in Greece could turn into a full-blown and contagious sovereign debt crisis, as explained in the April 2010 GFSR. A widespread public debt scare across major advanced economies appears unlikely, because together these economies have broad tax and investor bases. However, even here, risk assessments by investors are likely to increasingly differentiate among economies, showing greater sensitivity to deteriorating budgetary outlooks.

Risks related to sovereign debt could depress output for a variety of reasons. They could prompt premature withdrawal of fiscal stimulus that undermines recovery or limit the scope of new stimulus in response to new adverse shocks. As activity weakens, households and investors could lose confidence in governments' ability to design and implement sound consolidation plans and in response could sharply reduce their spending because of con-

[5] For a detailed discussion of the methodology used to construct the fan chart, see Elekdag and Kannan (2009).

cerns that taxes will increase or that prospects for growth, wages, and investment returns will diminish. Abrupt changes in exchange rates that distort production present further concerns.

The simulation in Figure 1.15 helps illustrate the potential role of confidence, limited room for policy maneuver, and relevant interactions. It shows the baseline projections (red line) and adds one shock: a confidence-induced drop in aggregate demand in advanced economies.[6] The resulting downside scenario (blue line) assumes that fiscal policy cannot offset this shock and that monetary policy is constrained at present levels. Households would experience continued weak labor market conditions and housing prices would drop further, following the expiration of key policy support measures. Firms would postpone hiring and investment and bank lending conditions would tighten with mounting loan delinquencies. Given weak recovery prospects in advanced economies, including for the growth of imports, emerging economies as a group would experience difficulties in sustaining exports and growth—monetary policy would be unable to offset the effects on output of the sequence of negative shocks, given its gradual impact. The result would be a delay in the recovery of several years, with unemployment declining at a slower pace and with persistent deflation in Japan.

Policies Need to Sustain and Strengthen Recovery

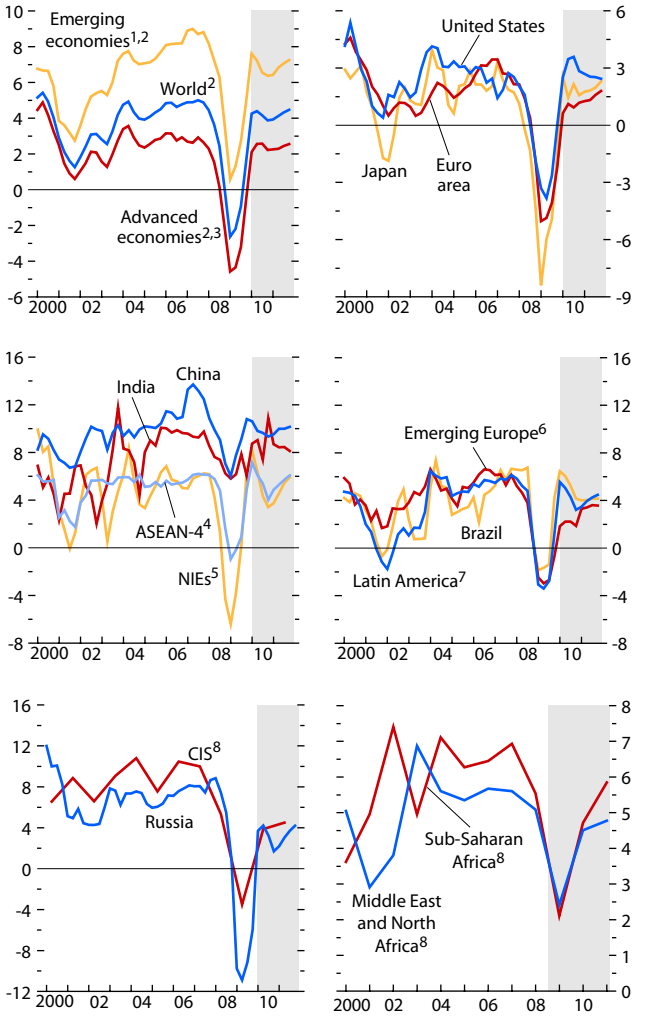
Policymakers are faced with major challenges. In many advanced and a number of emerging economies, they need to rebalance demand away from the public and toward the private sector, while consolidating public finances and repairing the financial sector. In a number of emerging and developing economies, policymakers need to increasingly tap domestic sources for growth, as demand from other economies will likely remain weaker than before the crisis. These rebalancing acts are proceeding but not without problems. Many advanced economies continue to struggle to repair and reform their financial

[6]The simulations are based on a six-region version of the IMF's Global Projection Model. See Garcia-Saltos and others (forthcoming).

Figure 1.11. Global Outlook

(Real GDP; quarterly percent change from one year earlier, unless noted otherwise)

Global growth is forecast to recover in all regions but remain below precrisis levels over the medium term. Accordingly, relative to precrisis trends, some activity has been permanently lost. Losses are particularly large in emerging Europe and the Commonwealth of Independent States (CIS), where recovery in many countries will be slow and medium-term growth rates appreciably lower than before the crisis. Recovery is also expected to be sluggish in a number of advanced economies, although less so in the United States than in the euro area and Japan.



Sources: Haver Analytics; and World Economic Outlook database.
[1]Comprises China, India, Russia, South Africa, Turkey, and economies listed in footnotes 4, 6, and 7.
[2]Includes only economies that report quarterly data.
[3]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, and United States.
[4]Indonesia, Malaysia, Philippines, and Thailand.
[5]Newly industrialized Asian economies (NIEs) comprise Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.
[6]Bulgaria, Estonia, Hungary, Latvia, Lithuania, and Poland.
[7]Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.
[8]Annual percent change from one year earlier.

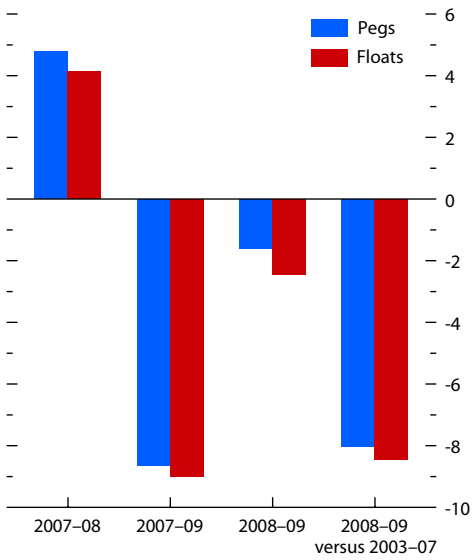
Box 1.1. Lessons from the Crisis: On the Choice of Exchange Rate Regime

Although emerging market economies were not at the epicenter of the global financial crisis, the experience of the past couple years may nevertheless hold important lessons for them. One such lesson concerns the choice of exchange rate regime—an obvious question being whether the regime can help explain how emerging market economies fared during this crisis, particularly in terms of output losses and growth resilience.[1] Theory suggests that exchange rate flexibility, by easing adjustment, should be associated with smaller output losses in the face of external shocks. This is also a popular perception of the current crisis—that economies with more flexible exchange rate regimes weathered the crisis better. What we find, however, is that economies with pegged regimes fared neither better nor worse than those with floats. Tentative work suggests that good performers, whether operating in the context of pegs or floats, allowed their real exchange rates to move in a direction that reduced initial misalignments.

A first look at the raw data on growth performance during the crisis yields the surprising result that both in absolute terms and in relation to previous performance, economies with floats—broadly construed to include the range from free floating to crawl-like arrangements—averaged larger output declines than pegs (first figure).[2] At the beginning of the crisis, average growth was more than half a percentage point higher for economies with pegged exchange rate regimes compared with those with floating regimes. As the crisis intensified, average growth declines for economies with pegs were smaller than for those with floats (8.6 and 1.6 percentage point declines for pegs in the periods 2007–09 and 2008–09, respectively, compared with 9.0 and 2.5 percentage point declines for floats). This same discrepancy holds for output declines as measured in relation to the economy's previous growth performance (first figure, righthand bar).

What accounts for this? In part, perceptions that economies with pegs fared worse may simply be

Average Growth for Various Periods of the Crisis
(Percent)



Source: IMF staff calculations.

The author of this box is Charalambos Tsangarides.

[1]A recent IMF study found that intermediate (neither rigidly fixed nor freely floating) exchange rate regimes are associated with the highest average growth performance by capturing some of the benefits of pegs (low nominal and real exchange rate volatility, trade integration) while avoiding the main drawbacks (exchange rate overvaluation). The study also found, however, that economies with pegged and intermediate regimes are more likely to experience currency and financial crises, although not growth crises (see Ghosh, Ostry, and Tsangarides, 2010). Another IMF study uses revised projections for GDP growth in 2009 (comparing forecasts prior to and after the intensification of the crisis in September 2008) and finds that exchange rate flexibility helped buffer the impact of the crisis (see Berkmen and others, 2009).

[2]The sample consists of 50 emerging market economies. Based on the IMF's de facto exchange rate classification at the end of each period of the analysis, the following are categorized as pegs: hard pegs (with no separate legal tender or a currency board), conventional pegged arrangements, pegs within horizontal bands, and crawling pegs. Others are categorized as floats. Of the four growth episodes, the first three calculate real GDP growth rates between 2007–08, 2007–09, and 2008–09, and the fourth compares growth in 2008–09 with growth in 2003–07. It is also possible that the choice of exchange rate regime may have affected growth performance prior to the crisis as well. This is why we examine both the absolute and the relative growth performance.

mistaken, driven by a few exceptional cases (such as the output declines in the Baltic economies) rather than based on a representative sample. But this misperception may be also, in part, an artifact of classification, because some economies with pegs responded to the crisis by moving to a more flexible regime (in order to use the exchange rate as an adjustment tool). Indeed, there was a distinct dip in the number of economies with pegs—particularly soft pegs and/or intermediate regimes—following the onset of the crisis, and this mostly reversed by 2010 (second figure). A similar, temporary shift toward de facto flexibility was observed after the Asian crisis. Although it remains true that economies that maintained their less flexible regimes may have fared better, it may be misleading to include economies that switched the category of their new regime if the reason they switched was related to their ability to respond to the crisis under their original regime. For example, if pegs are associated with asset bubbles that turn to busts, triggering both the economic downturn and the exit from the pegged regime, then it would be unfair to attribute the poor growth performance to the subsequent float. In addition to regime switching, another potential effect that casts doubt on the results of the first figure is that simple averages do not control for other factors that are likely to affect growth resilience in the crisis, including the impact of demand from trading partners.

To address these two issues, we remove economies that switched regime classification during 2008–09 and keep the economy categorized under the regime in place at the beginning of the period. Using regression analysis to control for partner country growth and commodity terms of trade, short-term external debt, reserve levels, and other determinants, as well as regime switching, we then estimate growth performance using the growth during 2008–09 relative to growth during 2003–07 as the dependent variable (table). The third figure presents predicted growth rates for pegs and floats based on regression analysis on the current regime, classifying economies throughout the period by the regime prevailing in December 2007 (second column) and eliminating all economies that switched regimes during the period of analysis (third column). The regression analysis controlling for

Growth during 2008–09 relative to 2003–07 and Exchange Rate Regime Classification

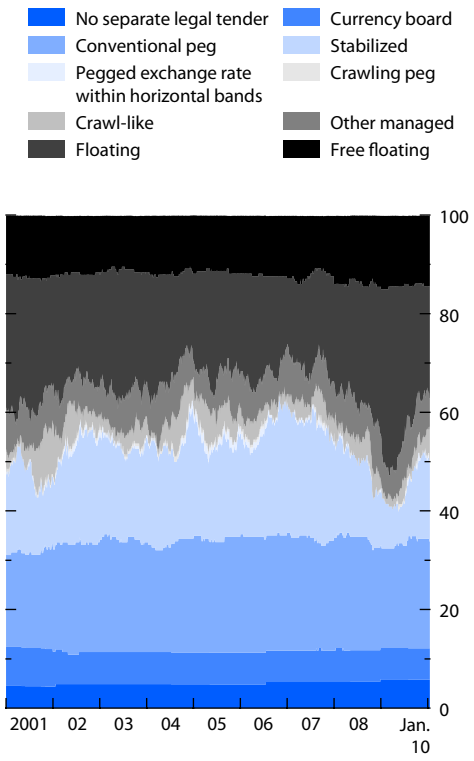
	Current Regime Classification		Excluding Switchers	
	(1)	(2)	(3)	(4)
Regime (1= fixed)	0.00535	0.01746	0.00395	0.01990
	(0.0151)	(0.0119)	(0.0168)	(0.0144)
Partner Growth 2008–09	2.35200***	1.39511**	2.4490***	1.11200
	(0.4250)	(0.6222)	(0.4240)	(0.7210)
Terms of Trade 2008–09	0.00065**	0.00083***	0.00056*	0.00086***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Short-Term Debt to GDP, 2006		0.00275***		–0.00268***
		(0.0008)		(0.0009)
Reserves to GDP, 2006	0.00050	0.00136*	0.00051	0.00059
	(0.0006)	(0.0008)	(0.0006)	(0.0007)
Current Account Balance to GDP	0.00083	0.00010	0.00032	0.00004
	(0.0019)	(0.0013)	(0.0021)	(0.0013)
Net Portfolio Investment to GDP	0.00276	0.01159	0.00268	0.00227
	(0.0041)	(0.0073)	(0.0039)	(0.0066)
Constant	0.01140	0.04369	0.00915	0.03790***
	(0.0151)	(0.0141)	(0.0146)	(0.0144)
Observations	45	39	38	32
R^2	0.58	0.60	0.59	0.63

Note: Robust standard errors are in parentheses . *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent level, respectively.

Box 1.1 *(continued)*

Exchange Rate Regime Classifications, 2001–09

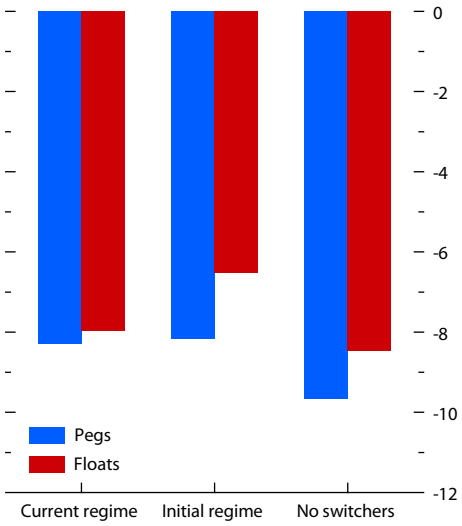
(Percent)



Source: IMF, *Annual Report on Exchange Arrangements and Exchange Restrictions.*

Predicted Average Growth, 2008–09 versus 2003–07 Using Regression Analysis

(Percent)



Source: IMF staff calculations.

regime switching and other potential factors affecting performance alters considerably the picture presented in the first figure: economies with pegged regimes fared no better than those with floats, and there is no residual difference in growth performance between pegs and floats (third figure).[3]

In sum, popular perceptions that emerging market economies with floating exchange rate regimes necessarily fared better during the global financial crisis do not appear to be supported by our investigation. After controlling for regime switches and taking account of other likely determinants of growth performance such as the magnitude of the external demand shock, growth performance for floats is no different from that for pegs. Although this result is not as surprising as the initial snapshot (that economies with floats did not perform better in the crisis), it nevertheless presents a puzzle. Given that economies with pegs have a natural disadvantage in dealing with shocks because they have forgone the use of the exchange rate as an adjustment tool, why did they fare no worse than economies with floats? More work is needed to formulate a concrete answer to this question, but some preliminary work suggests that during the crisis the good performers' real exchange rates tended to move in the "right" direction—that is, in the direction of reducing initial misalignments—and that before the crisis they had better reserve coverage of short-term debt.

[3] Estimated regression coefficients on the regime classification are not statistically significant, which suggests that fixed exchange rates are not associated with better growth performance than floats.

sectors, which is essential for sustained growth of private demand. Moreover, pressures remain for trade and financial protectionism. Concurrently, a concern in various emerging economies is that surging capital inflows may cause new boom-bust cycles. Some economies are resisting exchange rate appreciation that could support stronger domestic demand and reduce excessive current account surpluses, out of concern that appreciation could destabilize their economies.

International Coordination Is Essential for Strong, Sustained Recovery

Multispeed recoveries imply that policies will necessarily be tied to individual country circumstances, with the exit from supportive measures dependent on a self-sustaining recovery taking hold. But there are spillovers when the timing of policy actions varies, and economies should take these into account in setting policies. Spillovers related to fiscal policies are particularly relevant in the major advanced economies: domestic tightening has a negative impact on exports of other economies, and large deficits and the lack of well-specified medium-term fiscal consolidation strategies have a negative impact on the interest rates and risk premiums of fiscally challenged economies. In addition, resistance to capital inflows or exchange rate appreciations in some large emerging economies could undermine trade patterns or financial conditions for other emerging or advanced economies. Furthermore, some observers caution that exceptionally low interest rates in advanced economies could spur capital outflows, with potentially destabilizing effects for the recipient emerging economies.

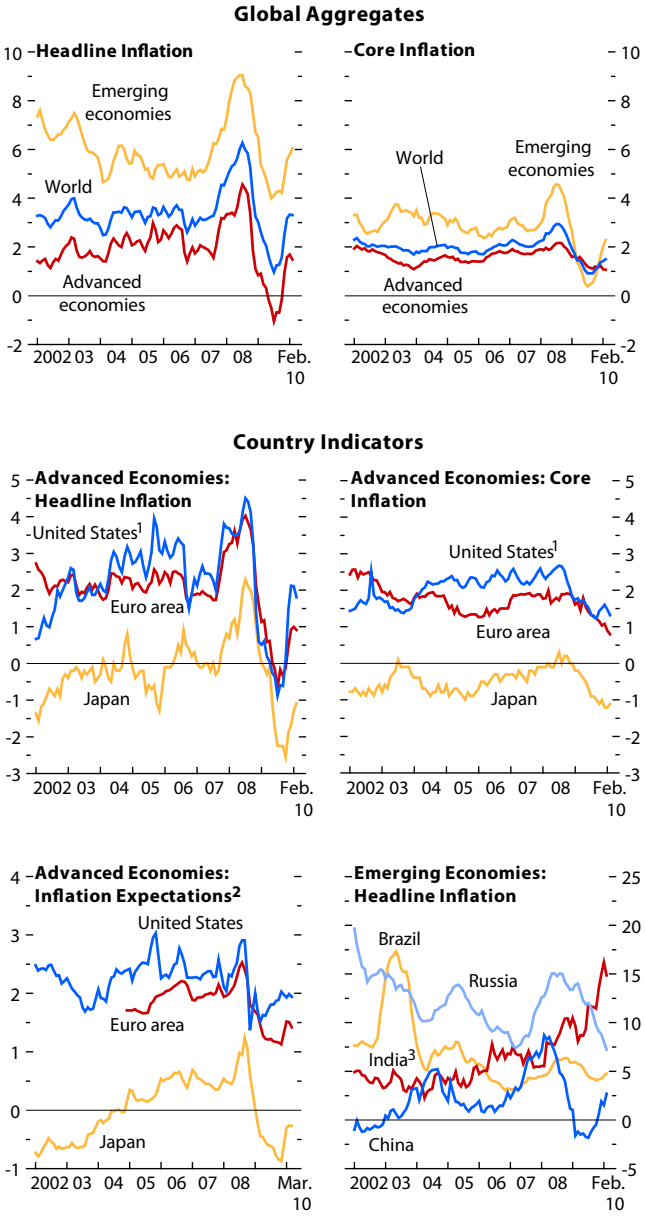
Exit policies should help address the structural and macroeconomic policy shortcomings that gave rise to unbalanced growth and large global imbalances over the past decade.[7] Shortcomings in the financial systems of advanced economies encouraged excessive borrowing and depressed

[7] Recall that current account imbalances raise concerns only to the extent that they are rooted in domestic or systemic distortions or if they create risks of disruptive internal adjustment (Dutch disease) or global dislocation (disorderly depreciation of an international reserve currency). For a more detailed discussion, see Blanchard and Milesi-Ferretti (2009).

Figure 1.12. Global Inflation

(Twelve-month change in the consumer price index unless noted otherwise)

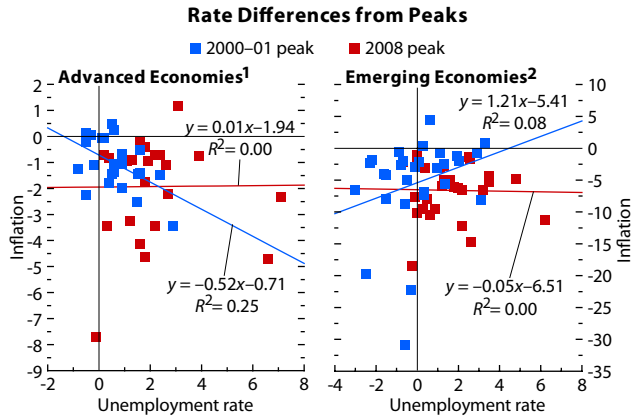
Inflation pressures are projected to remain low, held down by high unemployment rates and excess capacity. Inflation has been higher and more volatile in emerging economies, and inflation pressures could resurface more easily there than in advanced economies.

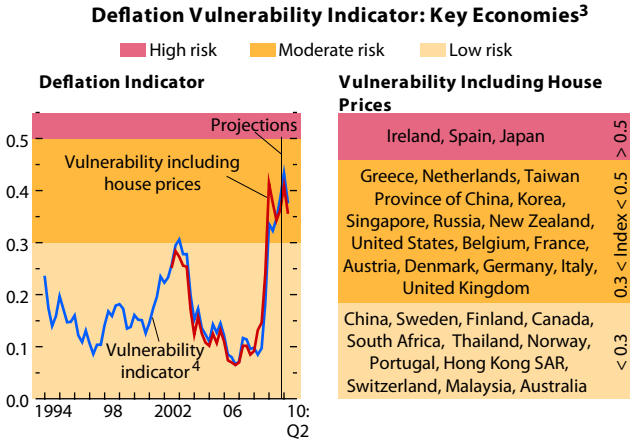


Source: IMF staff calculations.
[1]Personal consumption expenditure deflator.
[2]One-year-ahead *Consensus Forecasts*. The December values are the average of the surrounding November and January values.
[3]Consumer price index for industrial workers.

Figure 1.13. Inflation, Deflation Risk, and Unemployment

In advanced economies, the increase in unemployment and decrease in inflation are less correlated than during a similar period following the 2001 recession. In emerging economies, changes in unemployment and changes in inflation are generally poorly correlated. Deflation risks have receded at the global level, according to various indicators, but they remain pertinent in a number of advanced economies.





Sources: Bloomberg Financial Markets; Haver Analytics; and IMF staff calculations.
[1]Excludes Australia (2000–01 peak).
[2]Excludes three countries: Argentina (2000–01 peak), Estonia, and Latvia (both 2008 peak).
[3]For details on the construction of this indicator, see Decressin and Laxton (2009). The figure also features an expanded indicator, which includes house prices. Vulnerability is as of 2009:Q4.
[4]Major advanced and emerging economies.

private saving. At the same time, gaps in markets and government programs in a number of emerging economies boosted private saving to very high levels. Insufficient fiscal consolidation during good times in many advanced economies compounded these effects, as did the vast accumulation of official reserves by emerging Asian economies.

- In economies that need to rebuild savings and face relatively greater fiscal challenges, there is both a domestic and an international case for putting fiscal exit first. Furthermore, these economies need to accelerate financial sector repair and reform to build a stronger financial system and foster a more rapid return to robust growth. This would permit monetary policy to remain accommodative without causing inflation pressure or new financial market instabilities at home or abroad. Progress on both fronts is particularly important for the United States, given its systemic role in international financial markets, but also for other advanced economies that can affect the sovereign risk premiums of other economies.
- In economies with excessive current account surpluses and solid public finances, fiscal exit can wait while excess demand pressures are being addressed by reining in credit growth and allowing exchange rate appreciation. This is essential for China, given its large role in the global market. Greater currency adjustment in Asia would facilitate adjustment in other emerging economies that may fear losing market share if their currencies were to appreciate alone. Many emerging and developing economies also need to continue strengthening their financial stability frameworks to protect against speculative booms as they continue to attract capital.

The G20 Framework for Strong, Sustainable and Balanced Growth offers a forum to discuss and help achieve the required coordination of national policies. The next subsections of this chapter consider the fiscal, monetary, and financial policy challenges in more detail, and the final section presents simulations illustrating the benefits of policy coordination.

Credible Medium-Term Fiscal Policy Strategies Are Urgently Needed

In many advanced and a number of emerging economies, fiscal consolidation is a top priority and should precede the normalization of monetary policy. Economies need to make more progress in developing and communicating credible medium-term fiscal adjustment strategies. The goal should be to stabilize and eventually reverse the rise in public debt. This is mainly a challenge for many advanced economies, whose debt ratios have reached postwar highs in the context of subdued growth prospects (Figure 1.7). By contrast, the public debt problem in emerging economies is more localized—as a group, these economies' public debt ratios are about 30 to 40 percent of GDP and, given their high growth, can soon be on a declining path again.

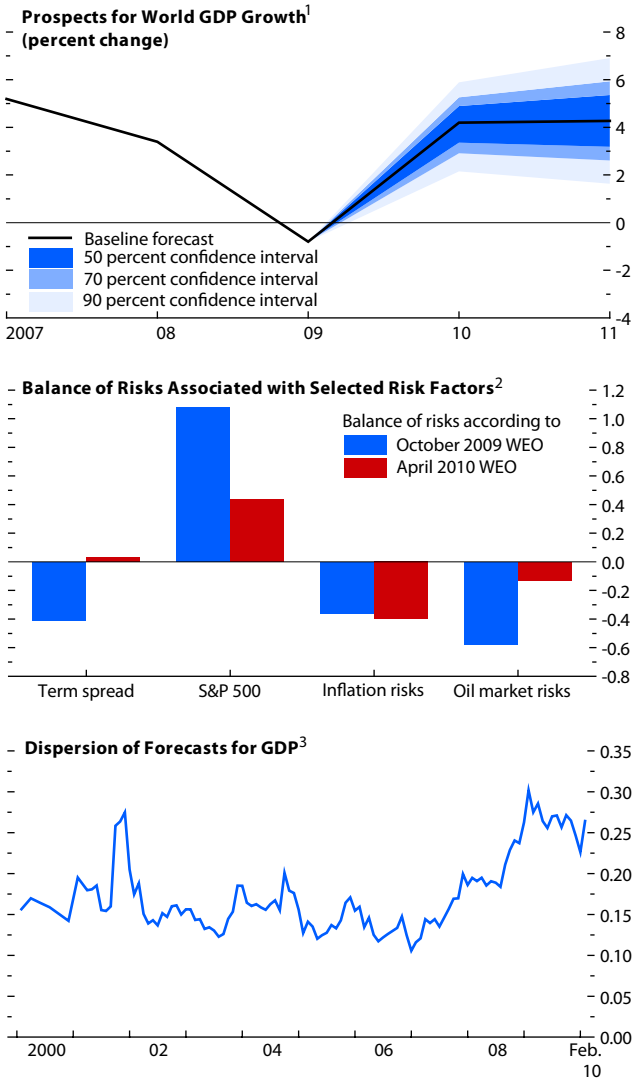
Given the still-fragile nature of the recovery, the fiscal stimulus planned for 2010 should be fully implemented, except in some economies that already need to begin to consolidate. These include economies that are facing large public deficits and debt and related pressures on sovereign risk premiums.

Looking further ahead, if macroeconomic developments proceed as expected, most advanced economies should embark on significant fiscal consolidation in 2011. However, the appropriate timing for tightening can differ among economies, depending on the strength of the recovery, external imbalances, levels of public debt and primary balances, and other fiscal variables that affect market perceptions.

Economies urgently need to design and implement credible fiscal policy strategies with clear time frames to bring down gross debt-to-GDP ratios over the medium term (see IMF, 2010a). In the short term, absent such plans, room for policy maneuver in response to new shocks could be heavily constrained. Looking further ahead, high debt ratios could impede fiscal flexibility, raise economy-wide interest rates, increase the vulnerability of fiscally challenged economies, and constrain growth. Furthermore, without reassurances that consolidation will occur in a way that supports labor supply and investment, expectations about future growth

Figure 1.14. Risks to the Global Outlook

Risks to the global outlook are lower now than in October 2009, despite some recent widening, judging by the dispersion of analysts' forecasts for GDP growth. Option prices on the S&P 500 suggest that upside risks from financial markets have diminished, possibly reflecting both the strong recovery in these markets and new volatility in some public debt markets. Options prices for oil suggest that downside risks to growth from high prices have also diminished.



Sources: Bloomberg Financial Markets; Chicago Board Options Exchange; Consensus Economics; and IMF staff estimates.

[1]The fan chart shows the uncertainty around the World Economic Outlook (WEO) central forecast with 50, 70, and 90 percent probability 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 in the April 2009 WEO for details.

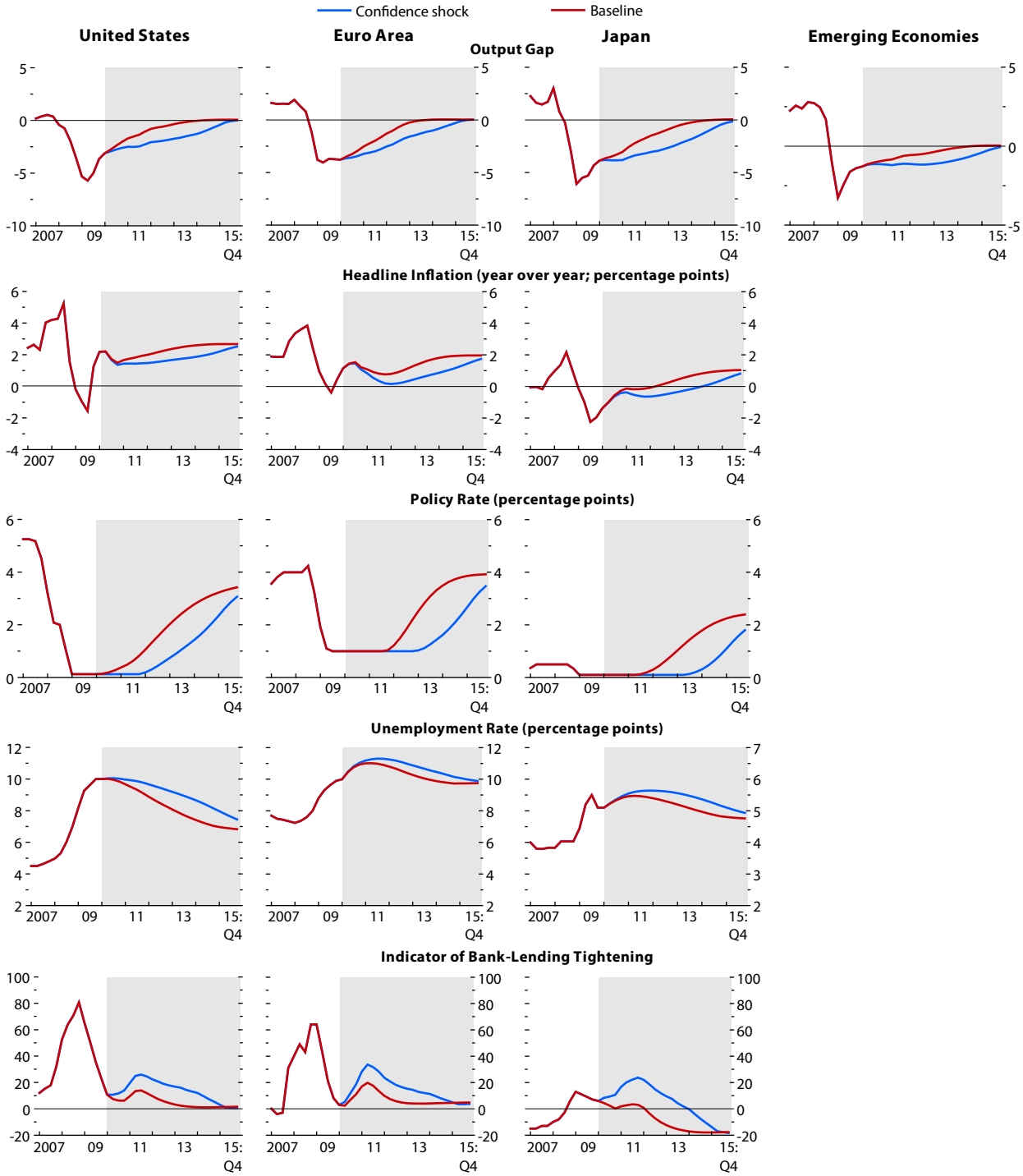
[2]Bars depict the coefficient of skewness expressed in units of the underlying variables. The values for inflation risks and oil market risks are entered with the opposite sign since they represent downside risks to growth.

[3]The series measures the dispersion of GDP forecasts for the G7 economies (Canada, France, Germany, Italy, Japan, United Kingdom, United States), Brazil, China, India, and Mexico.

Figure 1.15. Downside Scenario: A Loss of Momentum

(All variables in levels unless noted otherwise; quarters on x-axis)

Significant downside risks to the growth outlook remain. The biggest risk is that confidence in the recovery will falter in advanced economies, resulting in lower demand, tighter credit conditions, and continued weakness in the labor market. A more protracted recovery in advanced economies will produce significant spillover effects in emerging economies through trade and financial channels.



Source: Global Projection Model simulations.

may be lowered, savings raised, and investment postponed in advanced economies. As the downside scenario above suggests, the consequences of such an outcome could be severe, including for emerging economies that currently do not face high public deficits or debt. In the meantime, fiscal authorities in many economies should be actively managing their debt profiles to lengthen maturities and diversify investor bases.

Appropriate debt targets will depend on economy-specific characteristics. These include mobility of the tax base, composition of debt, depth of domestic financial markets, diversification of the investor base, vulnerability to shocks, and aging-related pressures on future public spending. Stabilizing the debt-to-GDP ratio at postcrisis levels will require significant adjustment in primary structural balances (by 4 to 5 percentage points of GDP or more if higher debt leads to higher interest rates and lower growth). To create room for fiscal support in the event of future crises and room for rising aging-related spending, debt-to-GDP ratios will have to be brought down. For example, in order for many advanced economies to reduce debt-to-GDP ratios below 60 percent (the median ratio among advanced economies prior to the crisis) by 2030, on average, the structural primary balance would have to improve by 8 percentage points of GDP by 2020 and would have to be maintained at that level for the following decade.

Such sizable adjustment in debt-to-GDP ratios will require substantial expenditure and revenue measures, above and beyond those already announced. The withdrawal of the 2009–10 stimulus measures will not reduce government spending by more than about 1½ percent of GDP. In advanced economies, entitlement spending, which constitutes a large and growing part of the budget, can be changed only gradually, and the extent to which discretionary spending can bear the burden of adjustment in the short term varies as a function of the size of government. However, for many economies revenue increases seem likely to be an inevitable part of medium-term budgetary strategies. These could usefully focus on broadening tax bases, especially by eliminating distortionary exemptions, such as those favoring owner-occupied housing, debt-financed consumption, or use of particular fuels.

Desirable reforms to entitlement spending should be implemented without delay. The longer-term expenditure implications of these programs are huge when aging populations are taken into account (Figure 1.7). As they stand, typical current entitlement programs imply off-balance-sheet liabilities well in excess of actual public debt. Measures such as linking statutory retirement age to life expectancy or improving the efficiency of health care spending would not impede the current recovery and would deal with the longer-term problems.

Strong fiscal policy frameworks and institutions that comprehensively cover the public sector would help support adjustment. Adopting or strengthening fiscal rules with explicit fiscal targets and monitoring by independent fiscal agencies could help shore up the necessary broad consensus for adjustment, anchoring expectations and guiding fiscal policy implementation over the medium term. Related credibility gains, in turn, can help mitigate potential short-term output losses from consolidation. Accordingly, steps in this direction should also be taken without delay.

The fiscal challenges are different for emerging economies, with some important exceptions. Many of the emerging Asian economies entered the crisis with relatively low public debt levels. China, in particular, can afford to maintain an expansionary fiscal stance as it seeks to rebalance externally generated and domestically driven growth, including by expanding subsidized health insurance for rural workers and strengthening its pension system. Other major emerging economies, however, have less fiscal room for maneuver: Brazil and India already have relatively large public sectors and debt, as do a number of Middle Eastern economies. In these and other economies in similar circumstances, new public sector efforts to promote long-term growth and foster social development will have to be funded by making cutbacks in less productive spending or closing loopholes in the revenue base. In sub-Saharan Africa, government spending plans were maintained or increased in the face of lower-than-anticipated revenue in 2009. As recovery is established, the focus of fiscal policy will need to return to medium-term considerations, including debt sustainability.

Monetary and Financial Accommodation Needs to Be Unwound Cautiously, while Managing Capital Inflows

In the major advanced economies, monetary policy can remain accommodative as fiscal consolidation progresses, provided inflation pressure remains subdued. This can be achieved even while central banks begin to withdraw the emergency support provided to banks and financial markets.[8] Some of the support facilities are already winding down as private market activity revives. But the persistence of vulnerabilities may require others to remain in place for some time, including for example, wider eligible collateral assets for central bank credit and programs for purchasing private sector securities and securitized loans, in particular mortgage-backed paper. Central banks that have purchased significant amounts of securities can neutralize the impact of these facilities on monetary conditions by using standard liquidity-absorption techniques—reverse repurchase agreements, open-market sales of treasury bills or central bank paper, and interest-bearing term deposit facilities at central banks.

In major emerging and some advanced economies that are experiencing faster recoveries, central banks have already begun to reduce the degree of monetary accommodation (for example, Australia, China, India, Israel, Malaysia, Norway) or are expected by markets to do so over the coming year (Figure 1.8). Because recovery in these economies is likely to be faster than in major advanced economies, they will probably continue to lead the tightening cycle. In some economies, overcapacity in some sectors and credit-quality deterioration point to the need for further tightening.

In emerging economies with excessive surpluses, monetary tightening should be supported with nominal effective exchange rate appreciation as excess demand pressures build, including in response to continued fiscal support to facilitate demand rebalancing or in response to capital inflows. In others, monetary tightening may be complicated, because it could undermine competitiveness and amplify foreign-currency borrowing. Calls for advanced economies to tighten monetary policy in order to alleviate pressures for appreciation of emerging economy currencies are misguided. First, it is necessary for some major emerging economies to rebalance external and domestic demand, and capital flows help achieve this. Second, differentials in short-term yields are only one among several drivers of capital flows—growth-prospect differentials are important as well, especially for equity flows. And third, fiscal spillovers are likely to be more important than monetary spillovers. The priority in major advanced economies is to put in place sound medium-term fiscal programs; as fiscal support is phased out, tightening monetary policies prematurely could undercut global recovery.

The first-best response would be for both advanced and emerging economies to improve their macroprudential, regulatory, and supervisory frameworks to stem speculative flows. Although this is not a short-term solution, some specific macroprudential measures could be considered (such as limits on foreign-currency loans by banks). If the potential for exchange rate overshooting to undermine competitiveness becomes a concern, economies should consider fiscal tightening to ease pressure on interest rates, some buildup of reserves, and possibly imposing some controls on capital inflows or removing controls on outflows. Any controls on inflows should be designed to accommodate implementation costs, the scope for circumvention in today's financial markets, and the potential for creating new distortions, notably diversion of flows to other economies.[9]

Repairing and Reforming the Financial Sector Is Essential for Sustained Recovery

Alongside fiscal consolidation, more progress with financial sector repair and reform is a top priority for a number of advanced economies. Financial market inefficiencies and regulatory and supervisory failures played a major role in the crisis and need to be remedied to build a stronger financial system. Progress in remedying financial inefficiencies and reforming prudential policies and frameworks will also increase

[8] For a discussion of these measures and related policy challenges, see Klyuev, De Imus, and Srinivasan (2009) and IMF (2010b).

[9] For further discussion, see Ostry and others (2010).

the effectiveness of monetary policy and reduce the risk that the ample supply of liquidity accompanying an accommodative monetary policy might find an outlet in renewed speculative distortions.

Reforms of prudential frameworks should ensure that the financial sector plays a greater stabilizing role over the business cycle. Given the increasingly integrated nature of financial markets and institutions, effective repair, reform, and deployment of macroprudential tools will require coordination across countries. These and other challenges are discussed in depth in the April 2010 GFSR.

In the short term, major work is still needed to repair damage wrought by the crisis:

- Bank recapitalization: More capital is required to absorb deterioration in credit quality and to support healthy credit growth in the future in the face of tighter regulatory standards.
- Bank resolution and restructuring: This will facilitate the return to health of the banking system and help avoid further turbulence from weaker institutions as extraordinary policy support is withdrawn.
- Reviving markets for securitized assets: These remain impaired and dependent on official support, yet they have become a normal part of the bank lending process in many advanced economies.

Looking further ahead, much work remains to reestablish market discipline. This can be achieved only through action on a number of fronts: better and more adaptable prudential policies and frameworks, including bank resolution regimes that provide authorities with broad powers to intervene in financial institutions; higher capital requirements; new funding instruments (such as contingent convertible bonds); incentives to keep financial institutions smaller and more manageable; requirements for institution-specific resolution plans; fees to cover bailout costs (ex ante and ex post);[10] and, as needed, direct restrictions on the size and scope of financial activities. Proposals exist to cover all these issues, and the challenge is to meld them together in a way that enhances the role of the financial system as one of the drivers of growth, including its integration across borders. At the international level, despite improvements made over the years, the crisis has revealed important gaps in supervision, in the process of burden sharing, and in procedures for resolution of failing institutions. These need to be remedied.

[10] In particular, proposals for a broad-based financial sector tax should aim to charge for the commitment of possible public sector support and align incentives so as to reduce systemic risks.

There Is a Need to Support Job Creation and the Unemployed

High unemployment poses major social problems. In advanced economies, unemployment is projected to stay close to 8½ percent through 2011 and then to decline only slowly (Figure 1.9). Moreover, the problem is even larger than the statistics suggest. Many of the employed are working shortened hours or in temporary jobs with few benefits. Others would like to find work but have given up searching and are thus no longer recorded as unemployed in the statistics. There is no single measure for broader unemployment or underemployment, but available data suggest that it can often be higher by 25 to 50 percent than headline unemployment rates (see Chapter 3).

The response of unemployment to the sharp declines in output during the crisis has been markedly different across advanced economies. For example, in the United States, the headline unemployment rate increased by about 4 percentage points, but in Germany, the unemployment rate increased only to a limited extent. Chapter 3 finds that these cross-country differences can be explained largely by variations in output declines, institutional differences, and factors such as financial stress and house price busts. Short-time work programs have also been important in dampening the unemployment response in some economies, notably Germany.

Given the expected sluggish recovery in output and the lingering effects of financial stress, the unemployment rate is forecast to remain high through 2011, although employment growth is expected to turn positive in many economies during 2010. Accordingly, a major concern is the potential for temporary joblessness to turn into long-term unemployment and to lower potential output growth. Appropriately stimulative macroeconomic policies are the first line

of defense against such an outcome. The second line is sound restructuring of the banking system: Chapter 3 demonstrates that recoveries from recessions associated with financial crises tend to generate little job growth, largely because of the dependence on bank financing of some employment-intensive sectors (such as construction and small and medium-size enterprises). It follows that restoring the health of the banking system would make an important contribution to employment growth. In addition, policymakers could consider innovative programs that facilitate access to capital markets for small and medium-size enterprises.[11]

Labor market policies are the third line of defense. Adequate unemployment benefits are essential to support confidence among households and to avoid large increases in poverty. Education and training can help reintegrate the unemployed into the labor force. Wage flexibility is important for facilitating a reallocation of labor in economies that have suffered major sectoral shocks. Earned income tax credits and similar programs can facilitate wage adjustment and help mitigate the effects of wage losses on living standards. Insuring individuals against wage losses they might incur when accepting jobs in other sectors or industries could also help in this regard, as Chapter 3 explains.[12]

Other measures, such as temporary subsidies for hiring, can be useful in advancing job creation in this environment of high macroeconomic uncertainty. However, the design of such programs is critical as experience has been mixed: for example, in some cases, a large portion of such subsidies was spent on jobs that would have been created anyway. Some economies have resorted to subsidizing short-time positions (see Chapter 3); again, these programs may be useful, particularly to the extent that activity is depressed by temporary, confidence-related forces. But their effectiveness and efficiency are likely to diminish over time.

Direct regulatory protection of existing positions may save some jobs in the short term but does little to create jobs over time. Economies that have suffered large losses of temporary employment should consider wholesale reform of employment protection legislation, with a view to breaking down the two-tiered, temporary-versus-permanent nature of some labor markets, which can stand in the way of on-the-job training and productivity growth and can undermine social cohesion. This might involve tightening temporary employment laws but relaxing restrictive permanent employment laws. In so doing, care would have to be taken not to undermine incentives to create jobs early during this recovery.

In most emerging and developing economies, increases in unemployment have generally been more contained than in the advanced economies.[13] However, in a number of these economies a larger portion of unemployment is likely to go unrecorded, and conditions in labor markets are generally worse than headline numbers suggest. In these economies, too, it is important to reduce unemployment and mitigate its harmful consequences. Education and vocational training programs, better job intermediation services, and a well-targeted social safety net can help.

The World's Poorest Economies Coped Better than in the Past

The world's low-income economies have suffered from the crisis, but their economic growth has held up much better than during previous advanced economy recessions. This testifies to their improved policy frameworks, which had boosted precrisis growth rates well above those recorded during the 1990s. Growth in these economies declined from about 7 percent in 2007 to about 4¾ percent in 2009 and is projected to return to about 5½

[11] Policymakers could consider developing new, standardized products to bundle loans or equity for such enterprises and implementing temporary measures to support their placement in markets. However, such products must have strong incentives for careful monitoring of these enterprises' operations.

[12] Individuals are often reluctant to accept wage cuts, and this may be especially relevant for economies that have traditionally seen relatively large nominal wage increases or experienced a long period of strong labor market conditions; or, at the microeconomic level, for long-tenured workers in declining industries (for example, in the automobile and steel sectors). Currently, insurance is offered only for (no-fault) unemployment—that is, a total rather than partial wage loss. This can undermine the incentive to accept lower-paying jobs. For further discussion, see Babcock and others (2009).

[13] Important exceptions are many countries in emerging Europe and the CIS.

percent in 2010.[14] Nonetheless, the fallout from the slowdown in terms of increased poverty has been significant. Estimates suggest that by the end of 2010, 64 million more people will have slipped into extreme poverty than without the crisis.[15] Many of these economies may find it harder to gain or regain access to foreign financing for development purposes. This puts a premium on developing their domestic financial systems. At the same time, advanced economies must maintain their development aid, even as they embark on major fiscal consolidation programs.

Global Demand Rebalancing: The Role of Credibility and Policy Coordination

For the world economy to sustain a high growth trajectory, the economies that had excessive external deficits before the crisis need to consolidate their public finances in ways that limit damage to potential growth and demand while restructuring their financial sectors to avoid renewed speculative excesses. Economies with excessive surpluses need to develop new sources of demand, as economies with excessive deficits scale back their imports in response to lower expectations about future income. IMF staff projections show that relative to precrisis trends, output losses by 2015 in economies with excessive external deficits before the crisis—which together account for roughly 27 percent of world GDP—will amount to about 15 percent of 2007 GDP (Figure 1.16).

Global demand rebalancing is not a new issue. Chapter 4 reviews the historical experience of economies with large surpluses. Germany, for example, ran globally significant current account surpluses in the late 1960s and early 1970s, which, as a share of global current account balances, were similar to those of China today (roughly 20 percent).[16] Germany too faced pressures to rebalance and did so successfully

[14] The economies comprise those that are eligible for access to the IMF's Poverty Reduction and Growth Trust (PRGT). During the major advanced economy recessions of the early 1980s, growth in PRGT economies fell below 2 percent; during the recessions of the early 1990s, output stagnated.

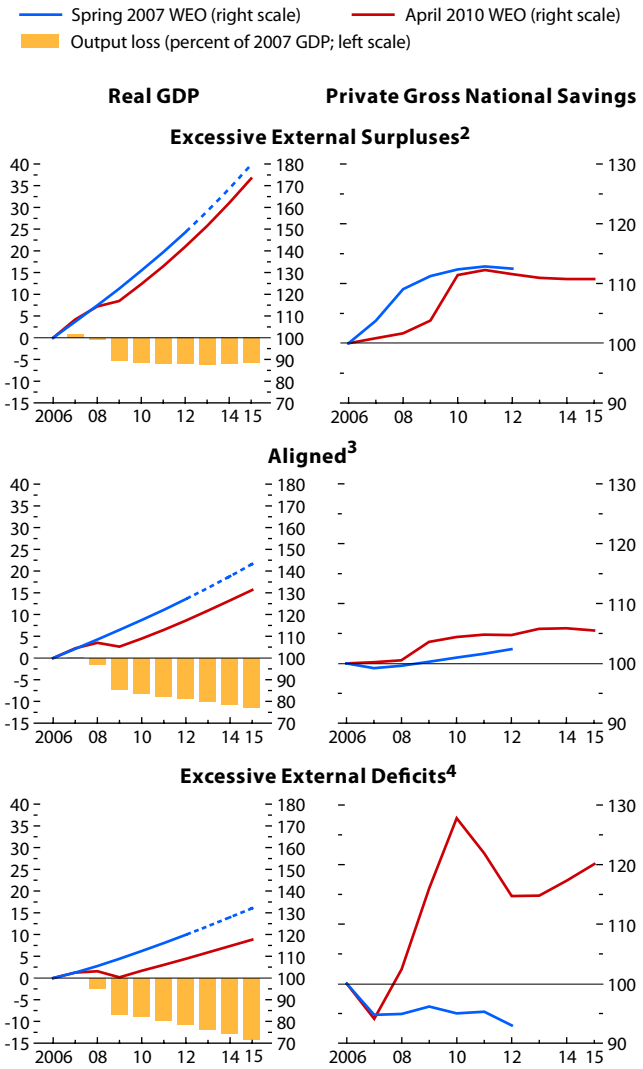
[15] See World Bank (2010).

[16] However, the total size of current account imbalances was smaller than today because capital markets were much less developed.

Figure 1.16. Medium-Term Growth Prospects and Precrisis Currency Valuations[1]

(Index, 2006 = 100)

All countries are facing lower growth prospects than before the crisis. However, countries that were judged to have overvalued currencies before the crisis and thus excessive external deficits have seen a larger downgrade of medium-term growth prospects than countries whose currencies were judged to be aligned or undervalued. Large increases in private savings in countries with currencies that were overvalued before the crisis are playing a major role in lowering potential growth.



Source: IMF staff calculations.

[1] Based on the IMF staff's Consultative Group on Exchange Rate Issues (CGER). CGER countries include Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Czech Republic, euro area, Hungary, India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, Pakistan, Poland, Russia, South Africa, Sweden, Switzerland, Thailand, Turkey, United Kingdom, and United States. Hungary is not included in the current WEO private national savings calculation. For a detailed discussion of the methodology for the calculation of exchange rates' over- or undervaluation, see Lee and others (2008).

[2] These countries account for 25.5 percent of global GDP.

[3] These countries account for 32.7 percent of global GDP.

[4] These countries account for 27.0 percent of global GDP.

during the 1970s. Studying a broad range of experiences in advanced and emerging economies, Chapter 4 finds that reversing current account surpluses has typically not been associated with losses in economic growth: policy-driven surplus reversals (and related exchange rate appreciations) are only one among many determinants of economic growth and are generally not decisive.[17] In some cases, expansionary macroeconomic policies helped boost domestic demand as foreign demand fell in response to exchange rate appreciations;[18] in other cases, exchange rate appreciation helped stem overheating; in still others, economies adopted broader structural reforms or their exports climbed the product quality ladder.

Compared with earlier periods, imbalances are now much larger, and successful global demand rebalancing will require more significant actions in both deficit and surplus economies. Policymakers will need to exploit macroeconomic and structural policy synergies, especially for fiscal consolidation in economies with external deficits.

Regarding macroeconomic policies, exit from accommodative fiscal positions is more of a concern for economies with excessive external deficits than for those with external surpluses. This exit should be achieved with measures that do not undermine potential growth—for example, through reforms to entitlement spending, increases in consumption and fuel taxes, and elimination of distortions that lower private saving, foster leverage, and boost investment in real estate. In economies with excessive external surpluses and room for policy maneuvers, fiscal policy can remain accommodative. In major emerging economies with large surpluses, fiscal measures could usefully be targeted toward improved programs for health care, pensions, and education. As the currencies of economies with excessive deficits depreciate, then logically those of surplus economies must appreciate. It would be preferable to achieve this by adjustments to nominal exchange rates than by adjustments to prices, as the latter typically takes much longer.

Regarding structural policies, financial sector reforms are the key to preventing new boom-bust cycles in both advanced and emerging economies, especially in those with excessive external deficits. A number of these economies also need to reform labor and product markets, rebuild competitiveness, and accelerate job growth, notably those with limited room for monetary or fiscal policy maneuvers (for example, some euro area and emerging European economies). In advanced and emerging economies with excessive external surpluses and high domestic saving rates, structural policies need to support domestic demand and the development of nontradables sectors. Particularly in emerging economies, regulatory frameworks for services and financial markets, including corporate governance, need further development to improve the efficiency of investment.

The benefits of a comprehensive and consistent set of macroeconomic and structural policies in terms of world growth can be illustrated with two sets of scenarios (Figures 1.17a and 1.17b).[19]

- In one set of scenarios (Figure 1.17a), fiscal-deficit-to-GDP ratios are eventually reduced relative to the baseline by about 3 percentage points in the United States and Japan and by 2 percentage points in the euro area. The measures comprise cutbacks in transfers and government consumption, significant hikes in consumption taxes, and reductions in labor and capital income taxes that are designed to raise potential output. The fiscal measures are implemented as one package gradually over five years. Crucially, in one scenario they are assumed to be fully credible immediately; in others, credibility grows as implementation proceeds. As the figure shows, with full credibility, real GDP in the United States and euro area is actually higher than in the absence of fiscal adjustment, because lower labor and capital taxes stimulate investment and employment. With limited but growing credibility, investment is postponed, employment and consumption weaken, and real GDP stays below the baseline for some time.

[17] By contrast, a large literature emphasizes that trade openness is key for growth.

[18] During a second rebalancing episode in Japan in the mid-1980s, overly expansionary demand policies may have contributed to the asset price bubble.

[19] These scenarios have been developed using the IMF staff's Globally Integrated Monetary and Fiscal (GIMF) Model. See Kumhof and others (2010).

- The second set of scenarios (Figure 1.17b) illustrates the benefits of additional policies designed to raise potential output and rebalance global demand, relative to a fiscal-adjustment scenario where full credibility is achieved gradually. China adopts structural reforms to raise productivity in the nontradables sector, lower household and corporate saving, and allow its nominal effective exchange rate to appreciate. In addition, the euro area, Japan, and other economies adopt a variety of reforms to raise potential growth, leading agents to save somewhat less in anticipation of higher incomes in the future. These reforms noticeably raise GDP relative to the fiscal-adjustment scenario, and—significantly—they lead to higher output relative to the baseline in all economies.

The key point to take away from these simulations is that the major challenges facing policymakers can be addressed in ways that enhance medium-term growth prospects and thereby limit damage to output in the short term. Much depends on the specific policy measures and their credibility. In this regard, the benefits of strong fiscal policy frameworks and institutions that support credibility could be substantial in economies that need to consolidate and reform their public finances, even if credibility gains in the short term will probably not be large enough to forestall some output loss from fiscal adjustment.

Appendix 1.1. Commodity Market Developments and Prospects

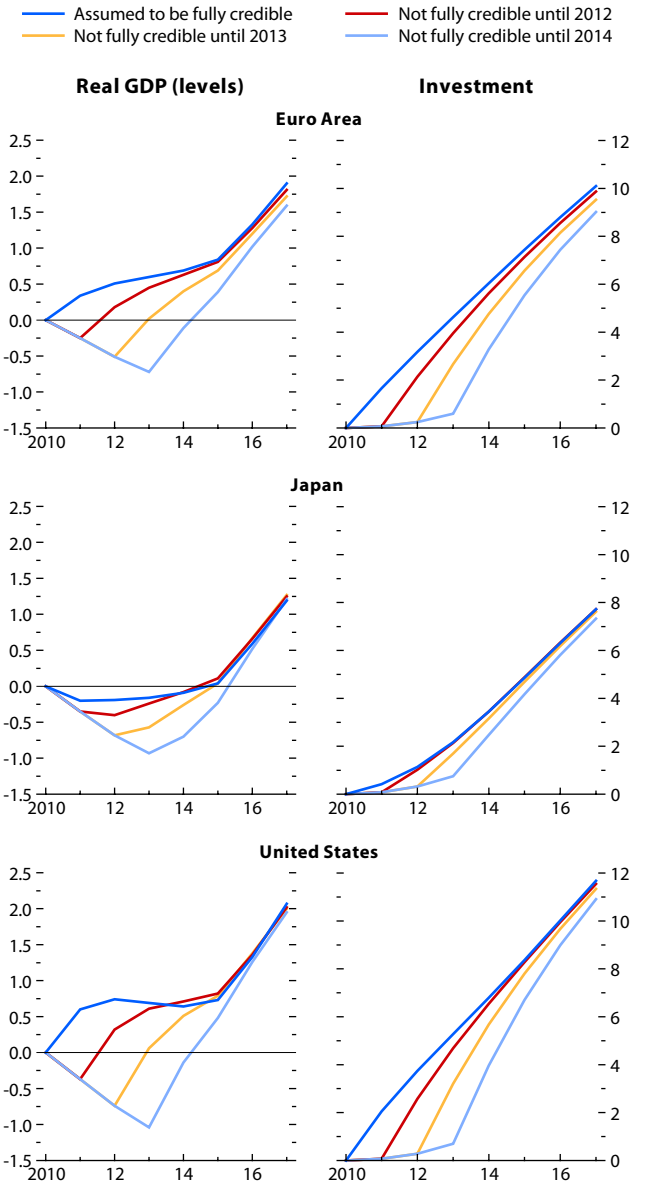
The authors of this appendix are Kevin Cheng, Nese Erbil, Thomas Helbling, Shaun Roache, and Marina Rousset.

Following their collapse in the wake of the financial crisis, commodity prices bottomed out in February 2009 and staged a sharp rebound thereafter. By the end of 2009, the IMF commodity index had risen more than 40 percent from its trough, largely on account of large increases in petroleum prices (over 70 percent) and metal prices (about 60 percent) (Figure 1.18, top panel). Despite these gains, however, at the end of 2009 the IMF commodity index in real terms was still 25 percent below its peak level of July 2008 (Table 1.2). With global economic and financial conditions improving

Figure 1.17a. Fiscal Consolidation Packages Designed to Raise Potential Output under Different Assumptions about Credibility

(Percent deviation from control)

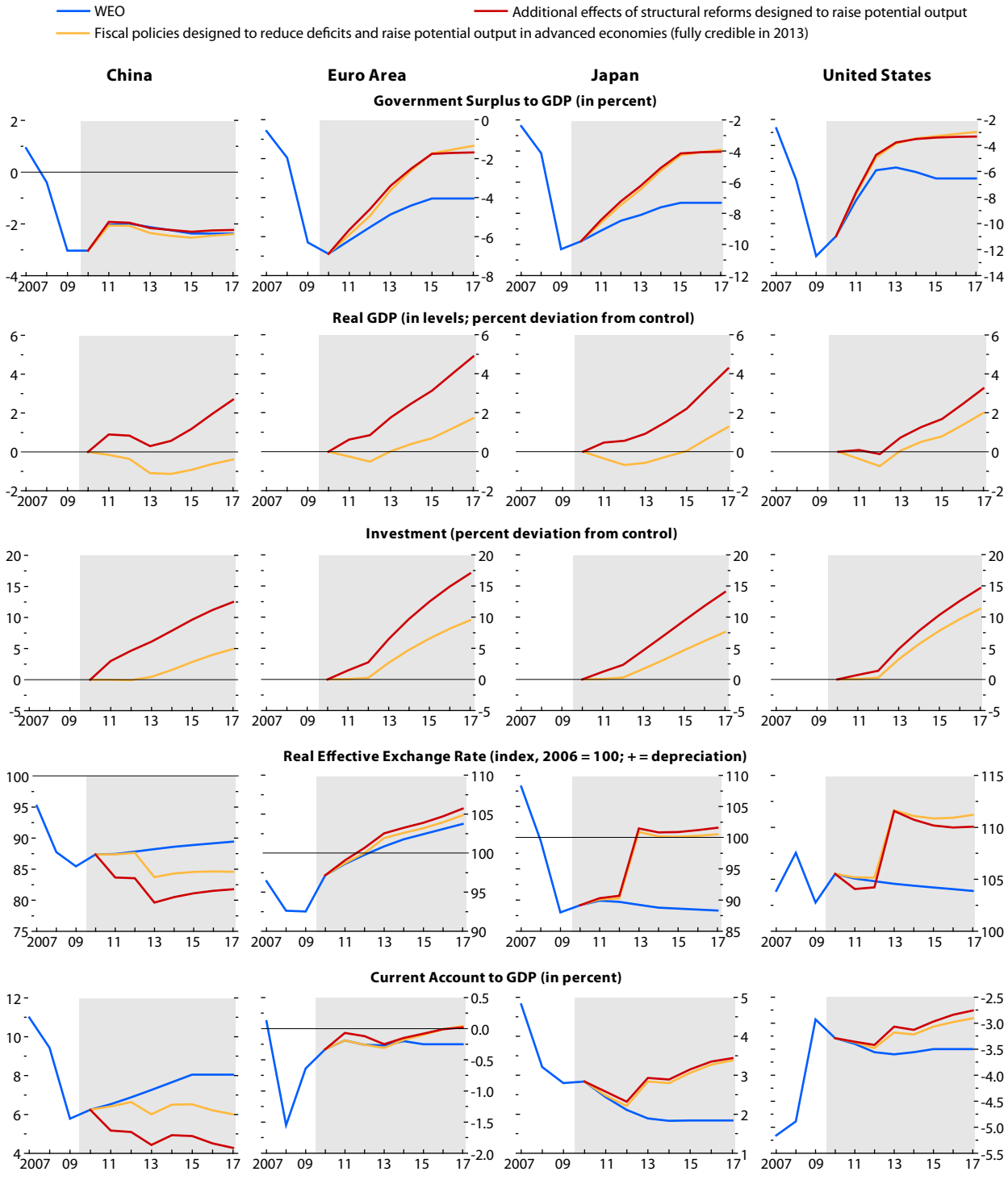
The medium-term effects of fiscal consolidation in the advanced economies will depend on the expenditure and tax instruments that are used. Some illustrative simulations with the Global Integrated Monetary Fiscal (GIMF) Model show that fiscal policies designed to raise potential output (lower taxes on capital and labor and higher taxes on consumption goods) could be successful in raising world output in the short term if they result in large downward revisions in expectations for future levels of debt and taxes on capital and labor. The simulations have been constructed under different assumptions about credibility to show the implications if agents are initially skeptical that the policies will be followed.



Source: Global Integrated Monetary Fiscal Model simulations.

Figure 1.17b. Scenarios Designed to Raise Potential Output and Reduce Government Deficits

Based on the IMF's multicountry GIMF Model, some scenarios have been developed to illustrate the benefits of supporting fiscal consolidation with structural policies designed to increase investment and potential output.



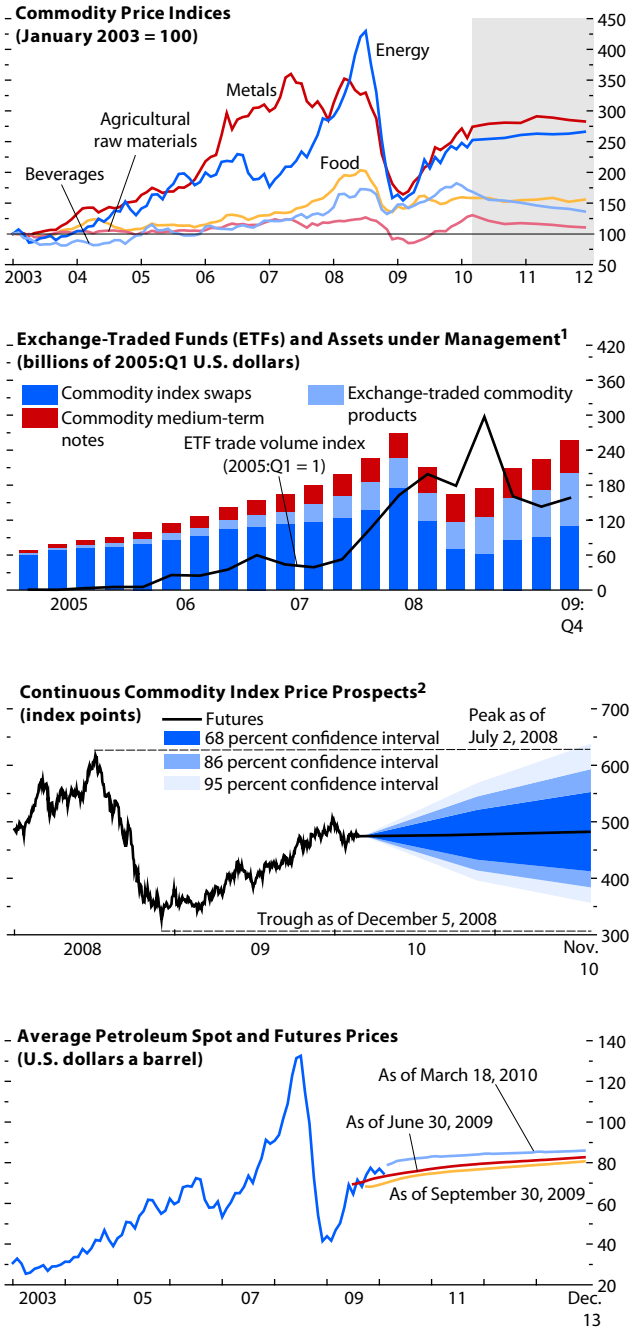
Source: Global Integrated Monetary Fiscal Model.

through 2009, commodity price volatility normalized after rising sharply during the Great Recession.

The sharp decline and subsequent rebound in commodity prices over the past year and a half is in notable contrast to previous global downturns and recoveries. Box 1.2 presents detailed IMF staff analysis comparing this cycle with earlier episodes. The conclusion is that a number of factors help explain why commodities have recovered more quickly and more extensively during this recovery. Most notable are the stronger-than-expected global recovery and the increasingly important role of emerging and developing economies in global commodity markets. In particular, the pace of recovery has been far quicker than anticipated in emerging Asian economies, where consumption of commodities has grown fastest in recent years. Another factor is smaller increases in excess inventories relative to average stock-use ratios (the commodity market equivalent of inventory-to-sales ratios) for many commodities. In addition, the U.S. dollar depreciation during this recovery and steady, low real U.S. interest rates stand in contrast to previous cycles, when real interest rates steadily increased and the U.S. dollar appreciated.

Despite the rapid price rebounds during this global recovery, a number of key commodity markets remain in contango, with spot prices below futures prices, suggesting the absorption of excess inventories after the global recession—the inventory adjustment process—is ongoing. As discussed in Box 1.3, the slow adjustment is not unusual. Following previous recessions, it often took futures curves some time—ranging from about three months to well over a year—to revert to their typical shape during "normal" market conditions. The typical slope of a futures curve varies by commodity, reflecting a range of factors, including the relative proportion of hedging by producers and consumers, the costs of storage, and the speed with which new supply can be brought to the market during periods when inventories are low. Despite these differences, when the physical market moves into a period of unexpectedly abundant supply, as it did during the Great Recession, commodity futures curves all tend to steepen markedly, with the spot and

Figure 1.18. Commodity and Petroleum Prices



Sources: Barclays Capital; Bloomberg Financial Markets; and IMF staff estimates.

[1]The current dollar figures provided by Barclays Capital were deflated by the IMF commodity price index to take out the effect of valuation changes due to commodity price movements.

[2]The Continuous Commodity Index is a futures contract on a composite of 17 commodity futures prices (equally weighted), which is traded at the New York Board of Trade. Price prospects are based on prices of futures options as of March 10, 2010.

Table 1.2. Commodity Real Price Developments
(Real commodity price indices, monthly; average 1990–99=100)

	December 2009	Peak March 2008	Trough February 2009	Average 2000–09
Commodity Price Index	172.1	230.6	123.2	133.6
Nonfuel	106.2	131.4	85.2	89.0
Food	97.4	122.7	88.9	82.6
Beverages	120.1	110.7	99.6	77.6
Industrial Inputs	114.2	143.7	79.4	97.6
Agricultural Raw Materials	73.8	77.7	58.9	75.2
Metal	162.3	222.3	103.9	124.3
Fuel	271.9	380.9	180.7	201.1
Crude Oil	283.5	392.6	161.5	203.3

Commodity Real Price Volatility (percent)[1]

	2009	2008	2000–09	1991–99
Commodity Price Index	5.2	10.0	5.2	4.0
Nonfuel	2.7	6.0	2.8	1.7
Food	3.8	6.2	3.2	2.2
Beverages	3.0	7.0	4.6	6.0
Industrial Inputs	4.1	6.4	3.7	2.2
Agricultural Raw Materials	4.1	4.4	3.1	2.7
Metal	5.2	8.1	4.9	3.7
Fuel	7.2	12.5	7.5	5.5
Crude Oil	8.5	13.9	8.8	9.2

Sources: IMF commodity price database; and IMF staff calculations.

[1]Volatility is calculated using the standard deviation of monthly changes in real commodity price indices (deflated by the U.S. consumer price index).

near-term futures prices falling by more than longer-dated futures prices.

On the financial front, investment inflows into commodity-related assets rose sharply during 2009, reflecting the continued relative attractiveness of this asset class (Figure 1.18, second panel). According to estimates by market participants, commodity-related assets under management reached $257 billion at the end of 2009—only slightly below their all-time peak in 2008. However, despite these inflows, there remains little evidence that financial investment has a significant sustained impact on commodity prices above and beyond current and expected supply-demand fundamentals. If anything, inflows tend to follow changes in fundamentals and prices, rather than the other way around. Recent disaggregated data from the U.S. Commodities Futures Trading Commission, which allow for a more comprehensive analysis of the impact of financial investors, support this view.

Near-term commodity price prospects depend importantly on the timing and strength of the global recovery. Upward price pressures from a further strengthening of demand will continue as global growth accelerates. Such pressures, however, will likely be moderated by high spare capacity and supply responses to the price rebound, albeit to varying degrees depending on the commodity. Furthermore, normalization of policy interest rates will likely raise the cost of inventory holdings, thereby reducing the incentive to hold inventories. For commodity markets, the policy normalization in emerging economies—where output gaps have been closing faster than in advanced economies—will be particularly relevant. As noted, these economies have been the main contributors to incremental demand, including, in many instances, for stockholding purposes.

Information from commodity option and futures prices suggests that investors and hedgers anticipate future price increases to be gradual and that they still see little probability of another commodity price spike, notwithstanding the recent uptick in prices (Figure 1.18, third panel). Nevertheless, some upside price risks remain, particularly if the global recovery continues to be more buoyant than expected. Other risk factors include heightened geopolitical tensions, major supply disruptions, abrupt increases in desired inventory stocks, and an unexpected depreciation of the U.S. dollar.

Over the medium term, commodity prices are projected to remain high by historical standards. Commodity demand is expected to grow again rapidly as the global recovery takes hold, whereas spare capacity and inventory buffers will likely decline over time. The tension between rapid demand and sluggish capacity growth is therefore likely to reemerge once the global recovery matures into a sustained expansion, thereby keeping prices at elevated levels by historical standards, as discussed in previous issues of the *World Economic Outlook*.

Oil and Other Energy Markets

After recovering rapidly from their crisis lows in the second quarter of 2009, oil prices have largely remained range-bound since mid-2009, fluctuating

Box 1.2. How Unusual Is the Current Commodity Price Recovery?

The sharp rebound in commodity prices in the wake of the most severe global recession in the period since World War II has taken many observers by surprise. How unusual was this rebound, given the experience with previous global downturns and recoveries? If it was unusual, what factors could explain the differences in recent commodity price behavior? This box addresses these questions. Specifically, it compares real commodity price and inventory behavior during this downturn-and-recovery cycle with previous cycles, including their relationship with other economic and financial indicators.

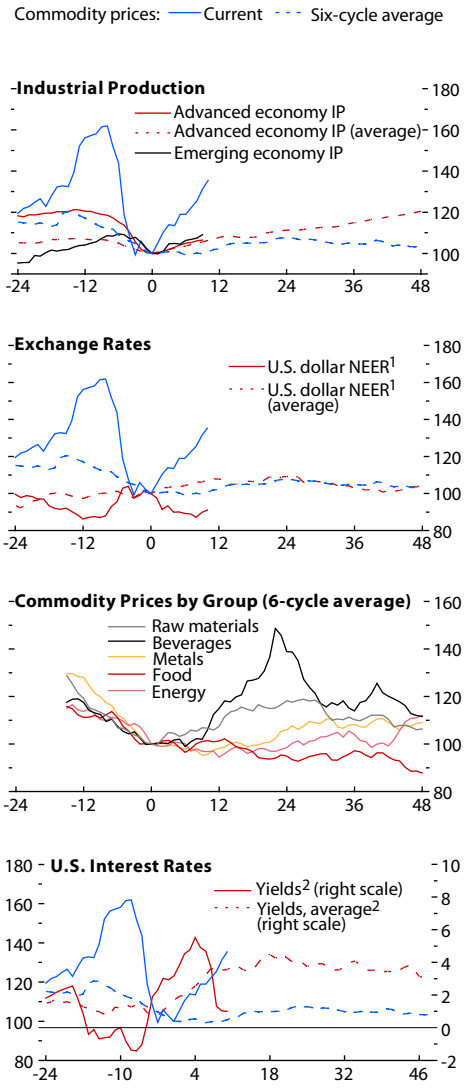
Relevant historical episodes were identified using turning points in advanced economy industrial production, for which monthly data were available for the sample period 1950–2009.[1] This measure of the business cycle excludes emerging economies, which are increasingly important commodity consumers. However, given that advanced economies accounted for a large share of world output during much of the sample period, this measure should accurately identify the turning points in global business cycles.

Examining previous downturns and recoveries in commodity prices suggests the following stylized facts about real commodity price and inventory behavior during such episodes.

- Commodity prices and industrial production, on average, tend to peak at about the same time before the trough in the cycle (at 13 and 15 months, respectively), but commodity prices experience larger declines, falling by more than 20 percent compared with about 8 percent for industrial production (first figure).[2]

Commodity Price Cycles: Past and Present (1950–2010)

(U.S. dollar index = 100 at trough in advanced economy industrial production (IP) on y-axis, months from trough in advanced economy IP on x-axis)



Sources: Bloomberg Financial Markets; Global Financial Data; IMF commodity price database; and IMF staff calculations.
[1]Nominal effective exchange rate.
[2]Real three-month Treasury bill yields.

The main authors of this box are Shaun Roache and Marina Rousset.

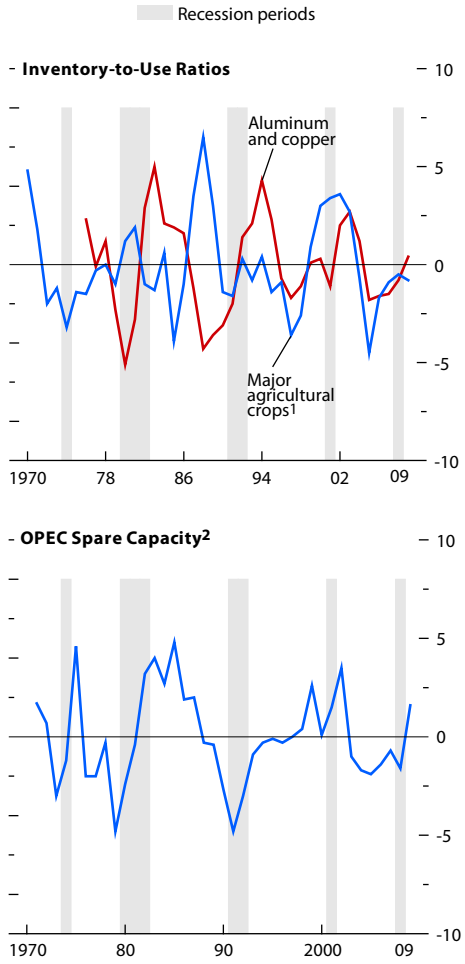
[1]The Bry-Boschan cycle-dating routine was used to identify turning points. Industrial production data were used for the United States from 1950 through 1959. See Cashin, McDermott, and Scott (2002) for a similar approach.

[2]Commodity prices are measured using an equally weighted index of beverages, energy, food, metals, and raw materials. The most important commodities in each group (three beverages, three energy commodities, six food crops, six metals, and three raw materials) were also equally weighted within each group. Before the IMF index start date of January 1957, the equally weighted Commodity Research Bureau index was used.

Box 1.2 *(continued)*

Inventory and Spare Capacity Cycles

(Percentage point difference from trend)



Sources: Energy Information Administration; International Energy Agency; United States Department of Agriculture; World Bureau of Metal Statistics; and IMF staff estimates.
[1]Includes corn (maize), rice, soybeans, and wheat.
[2]As percent of global consumption. OPEC = Organization of Petroleum Exporting Countries.

- During the recovery phase, which is measured from the trough in industrial production, commodity prices have tended to rise at a relatively gradual rate; after 12 and 18 months, they increase by about 2 percent and 5 percent, whereas industrial production increases by 8 percent over both horizons (second figure).
- Exchange rates and real U.S. interest rates may explain part of the weak commodity price response to recovery during earlier episodes. Over the previous six cycles, the U.S. dollar appreciated and real interest rates rose, on average, one to two years after the start of the recovery, both of which would tend to lower commodity prices, other things being equal.
- In terms of types of commodities, industrial production recovers faster than prices for the majority of the individual commodity groups one to three years after the start of the recovery. The exceptions are beverages and raw materials, for which prices rise by more than industrial production one to two years after recovery.
- In terms of the supply-demand balance, inventory-to-consumption ratios typically increase during downturns in industrial production, peak sometime after the trough, and then typically fall. Based on year-end annual data starting in 1976, the inventory-to-use ratio for base metals (aluminum and copper) rose by about 7½ percentage points compared with its trend level, on average, for the three downturns corresponding most closely to the cycles in 1980–82, 1991–92, and 2001 (second figure).[3] For major agricultural crops (corn, rice, soybeans, wheat), this same ratio increased by about 2 percentage points to reach about 1½ percentage points above trend during four cycles since 1970. For crude oil, OPEC spare capacity increased by 4¾ percentage points relative to trend during the downturns, although the size of these changes has fallen significantly since the 1980s.

Set against these historical precedents, it becomes clear that for commodity prices, the current cycle is different.

- Prices fell much further and faster during the Great Recession and have subsequently recovered far more quickly. Compared with an

[3]The trend was derived using a Hodrick-Prescott filter. The ratios were extrapolated beyond 2009 using forecasts of the first differences from an ARIMA (p,q) model selected by information criteria to reduce end-point bias.

average cycle, commodity prices dropped by three times the usual amount in a quarter of the usual time.
- During the current recovery, commodity prices have rebounded more quickly, rising by 33 percent since the trough (as of February 2010) compared with the near 7 percent and 9 percent increases in advanced economy and emerging economy industrial production, respectively (as of December 2009).
- The behavior of supply-demand balances during this cycle has been similar to previous episodes in terms of direction, with inventories and spare capacity both rising. However, the increases in stock-use ratios have tended to be smaller, except in oil markets, and most commodity markets appear not to have moved into a state of extreme oversupply, as in previous recessions. The ratio for major crops, for example, has increased by 3¼ percentage points from its low point in 2005, but since the onset of the recession it has remained largely unchanged.

A number of factors may help explain why commodity prices have recovered faster and by more during this recovery. One may be that the initial decline was so abrupt and steep that prices overshot on the downside, so that the subsequent rebound simply reflects an adjustment from oversold conditions. However, this does not explain the underlying fundamental forces that could have caused the V-shaped recovery in prices. One explanation for this is the stronger-than-expected recovery in global demand, which was driven largely by extraordinary macroeconomic policy support. A second is the changing structure of commodity demand, with emerging economies accounting for an increasing share of global consumption across a range of commodities, and the lead role of emerging economies, in the recovery. In particular, the pace of recovery in emerging Asia, where consumption of commodities has grown fastest in recent years, has been far quicker than anticipated.

The decline and recovery of commodity prices have been more synchronized with equity markets in the current cycle than in the past, which may lead some observers to identify financial investment as a possible explanation. Increased comovement, however, likely reflects the sensitivity of both markets to broader economic developments. Although the scale of the price changes during this cycle has been large, other market developments, including changes in the slopes of futures curves and the buildup of inventories, have been within the range of historical experience. This indicates that demand- and supply-related fundamentals, rather than financial investment, continue to play the dominant role in commodity price formation.

The rapid rebound of growth in emerging economies and the relatively weaker pickup in advanced economy demand have also affected other commodity price fundamentals. Specifically, the U.S. dollar has depreciated since the trough in industrial production, particularly against some emerging economy currencies, while U.S. real interest rates have remained low (the rise just before and after the trough in industrial production largely reflects the effects of rising and falling oil prices on headline inflation). This is in sharp contrast to previous cycles—particularly in the 1980s—in which real interest rates steadily increased and the U.S. dollar appreciated.

between $70 and $80 a barrel (Figure 1.18, lower panel), although they have traded above that range since early April 2010. The bounded fluctuations have reflected opposing effects from the adjustment of oil demand and supply to the normalization of global economic and financial conditions, respectively.

Price support at the lower end of the band stemmed from the rebound in global oil consumption as the recovery in global activity progressed (Figure 1.19, top left panel). On an annual basis, the International Energy Agency estimates that global oil demand fell by 1.3 million barrels a day (mbd) in 2009, a 1½ percent decline (Table 1.3). This reduction is somewhat larger than expected, given the usual relationship between global oil demand and global GDP—the elasticity is slightly below ½

Box 1.3. Commodity Futures Price Curves and Cyclical Market Adjustment

Inventory cycles for commodities reflect shifting supply-demand balances, and in many cases, the global business cycle explains much of their variation. During recessions, inventories typically increase as demand unexpectedly weakens, and the Great Recession was no exception, with stockpiles climbing across a broad range of commodities. These fluctuations in inventories influence the shape of futures price curves, because spot prices tend to be more sensitive to current physical market conditions than futures prices, which are more strongly influenced by expectations about the future. In particular, as inventories build through economic downturns, spot prices fall by more than futures prices, leading the curve to steepen and move into "contango." In contrast, during periods when demand is unexpectedly strong and inventories fall to relatively low levels, as they did for many commodities during 2007–08, spot prices rise above futures prices, resulting in an inverted price curve referred to as "backwardation" (the first figure shows for aluminum the difference between the spot price and price on a futures contract for delivery in six months discounted by interest rates). This box explores the behavior of these futures price curves in more detail, focusing on how they adjust following a shock. It also provides evidence that inventory levels play a key role in the adjustment process. The analysis focuses on six base metals (aluminum, copper, lead, nickel, tin, zinc) for which inventory data are available at a daily frequency for 1997–2009.

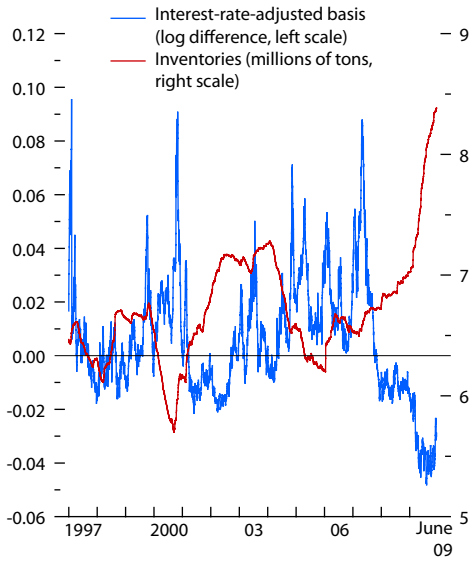
Unlike financial assets, for which interest rate arbitrage determines the relationship between spot and futures prices, the slope of commodity price curves incorporates storage costs and a convenience yield in addition to interest rates. The convenience yield is often defined as the marginal benefit that accrues to the inventory holder from holding an additional unit of the physical good—for example, for a manufacturer that uses commodities as an input, the ability to avoid input shortages and production shutdowns. This results in spot prices being higher relative to the futures price than in the absence of such a benefit. These marginal benefits are often assumed to be decreasing in the level of inventories; in other words, an extra unit of the commodity is much more valuable when stocks are low than when stocks are high. This implies that the effect of changes in current or expected future inventory levels will affect the convenience yield and the shape of the futures price curve differently depending on the initial inventory level.

It is possible to consider a market that is "normal" in terms of the average relationships between spot prices, futures prices, interest rates, and inventories given that cointegration tests for base metals indicate that these variables share a stable long-term relationship. Taking interest rates as exogenous, this means that when the relationship between these market variables deviates from normal, often due to a shock in the supply-demand balance that causes the difference between spot and futures prices to change, prices and inventories will adjust over time back toward their long-term equilibrium.

Empirical evidence suggests that the adjustment toward long-term equilibrium varies with the market

The authors of this box are Shaun Roache and Nese Erbil.

Aluminum: Futures Curve Slope and Inventories



Sources: Bloomberg Financial Markets; London Metal Exchange; and IMF staff calculations.

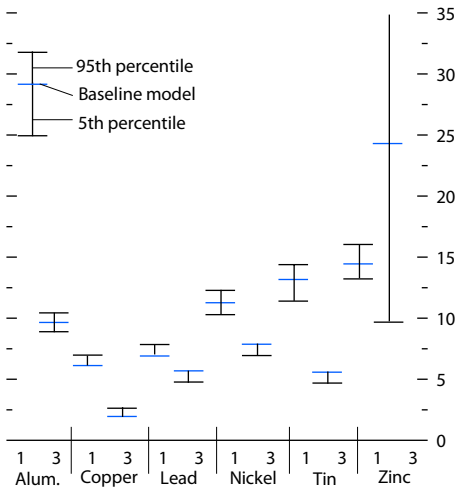
conditions prevailing when markets are hit by a shock. In other words, there are nonlinearities in the adjustment process. Specifically, tests for so-called threshold behavior suggest that the speed of adjustment toward long-term equilibrium varies depending on the initial slope of the futures curve.[1] The tests suggest that there are three different adjustment regimes present in major metals markets. When the futures curve is backwardated (typically because inventory levels are relatively low), the adjustment tends to be more rapid than when the curve is in steep contango (which often signals that supply is abundant and inventories are relatively high).[2] For a 1 percentage point shock to the futures curve (imposed as simultaneous and opposing shocks to spot and six-month futures prices), the time taken for half the initial shock to dissipate is approximately twice as long compared with a situation when the market is initially in contango (referred to as regime 1 in the second figure) than when the market is in backwardation (regime 3).

The diminishing marginal utility of inventories—and its effects on the convenience yield—is likely to be the mechanism driving these results. In particular, when backwardated, the market is providing strong incentives for market participants without an immediate business need for the physical commodity to sell at prevailing spot prices. For producers, this could be interpreted as an incentive to increase production and deliver supply immediately to the spot market, whereas for consumers it may weaken demand, all of which would serve to raise usable inventories back to "normal" levels. The change in expectations for inventory levels would then have a relatively large effect on convenience yields and cause spot prices to fall rapidly lower toward futures prices. In contrast, when in steep contango there are strong incentives for producers to curtail production and for other market participants to buy in the spot market, hold inventory, and hedge their position using futures contracts. These responses would serve to reduce usable inventories, but if the effect of these changes on convenience yields is smaller than in backwardation, then the slope of the futures curve would be relatively insensitive.[3] In other words, consistent with the results from the analysis of base metals, the market would remain in steep contango for longer—in some cases significantly longer—than in the case of backwardation.

Futures price curves have been in steep contango across a broad range of commodities since the third quarter of 2008. Compared with previous recessions, the duration of this contango

Half-life of 1 Percentage Point Futures Curve Shock[1]

(Six-month maturity; commodity and regime (1 or 3) on the x-axis, days on the y-axis)



Source: IMF staff estimates.
[1]The y-axis has been truncated at 35 days, and zinc is the outlier, with a 95th percentile value close to 50.

[1]Two tests for nonlinearity of the adjustment process were used: the ordered autoregression approach of Tsay (1989) and the Andrews-Quandt breakpoint procedure.

[2]Results are from a vector error-correction model in which spot prices, futures prices, and inventories are endogenous variables. The adjustments were calculated using impulse responses from simultaneous and opposing shocks applied to the reduced-form residuals of the spot price and futures price equations. Confidence intervals for the half-life adjustment duration were calculated using 500 bootstrapped replications.

[3]Inventories tied up in financing deals for arbitrage trades are often not available for immediate use, and this serves to reduce usable inventory levels.

Box 1.3 *(continued)*

has not been especially long, underscoring the extent to which these conditions can persist. However, contango has been particularly steep across a number of commodities, including base metals and crude oil, reflecting the size of the initial demand shock. Curves have begun to flatten in recent months in many cases, in part due to the recovery in demand and evidence that the inventory cycle has decisively turned lower (for example, crude oil) or has started to flatten (for example, base metals). Further gradual adjustment toward "normal" market conditions is likely over coming quarters, conditional on continued global economic recovery. However, as inventory levels for many commodities are still relatively low for this point in the cycle from a long-term perspective, there are upside risks for prices and for renewed backwardation looking further ahead.

based on data for 1985–2008—considering the 36½ percent decline in oil prices over the same period. The sharper-than-expected decline was the result of a strong demand contraction in Organization for Economic Cooperation and Development economies. In contrast, consumption in emerging and developing economies rose by 1.8 percent, somewhat more than expected based on GDP elasticities and actual growth outcomes in these economies.

Price pressure at the upper end of the band was capped by the recovery in global oil production from the lows recorded in the second quarter of 2009. Higher production by both Organization of Petroleum Exporting Countries (OPEC) and non-OPEC suppliers contributed to the improvement. Production by the economies in OPEC, which are subject to production quotas, increased by some 0.6 mbd from the lows reached in January 2009 (Figure 1.19, top right panel). Quota discipline has thus fallen below 60 percent, but the quotas have not yet been revised in light of firming oil market conditions.

Non-OPEC supply also increased in 2009 rather than falling, as had been expected early in the year after the persistent weakness in recent years (Figure 1.19, second row, left panel). Higher U.S. production, mainly from new offshore capacity coming onstream in the Gulf of Mexico, and a recovery in production in Russia were the main sources of improved non-OPEC supply. The latter seems to have reflected, in part, expectations of tax cuts on exports from eastern Siberian fields, one of the new frontiers in Russian oil production.

Turning to market balances, the supply rebound has lagged the demand recovery, and the global oil market has gradually moved from excess supply with inventory accumulation in early 2009 toward more balanced demand supply, with a decrease in excess inventories. OPEC spare capacity, however, has not yet decreased from the high reached during the recession despite some production increases through 2009, as new capacity has come onstream (Figure 1.19, second row, right panel). On the price side, this adjustment was reflected in a decline in the spread between futures and spot prices, whereas on the physical market, it was reflected in a decline in excess inventories (inventories above five-year average levels). Even so, the adjustment is not yet complete. The oil futures curve has not yet returned to the usual state of "backwardation" (a downward-sloping futures curve).

The near-term outlook for oil prices depends importantly on the interaction between upward pressure from demand increases as global growth accelerates in 2010 and the supply response. Indeed, the recent rise in prices above the $70 to $80 range has largely reflected expectations of accelerating global economic growth and stronger-than-expected oil demand increases. With both OPEC spare capacity and OECD inventories still above recent historical averages, upward price pressure should remain moderate for some time, barring any significant change to the medium-term outlook. Even so, the call on OPEC (difference between global demand and non-OPEC supply) is expected to increase markedly in 2010, and the price dynamics will depend on producers' readiness to tap their spare capacity.

Looking to the medium term, the oil price outlook depends on prospects for maintaining sustainable demand-supply balances. On the supply side, oil

discovery developments have been promising. In the first half of 2009, reported findings of new oil deposits were about 10 billion barrels, the highest rate (annualized) since the late 1990s. The rise in the rate of new discoveries is not surprising, given recent increases in the net value of oil reserves and the corresponding incentives for exploration (Figure 1.19, third row, left panel). In this respect, the price collapse in late 2008 turned out to be mostly a temporary setback, as oil prices recovered much of the losses, while investment costs decreased. Indeed, the Baker-Hughes international oil rig count has already recovered some of the losses of late 2008 and early 2009.

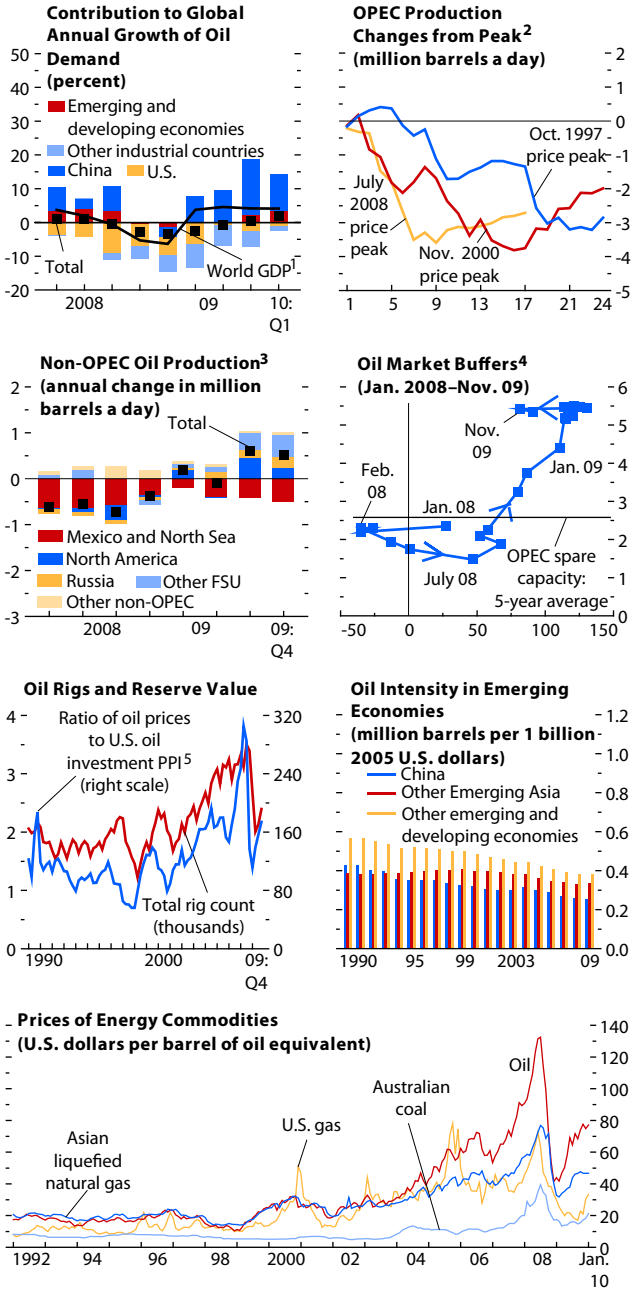
Although discovery developments have been encouraging, they do not address all supply concerns. The main bottlenecks in recent years have been the slow development of new fields and the maintenance of existing fields. The main reasons are long time-to-build lags, especially at the technological frontier, but also unfavorable investment regimes in many economies. There is some hope, however, that the higher oil prices and the increased value of oil reserves will boost oil sector investment. The substantial rise in capital expenditure by oil companies in recent years suggests that higher prices have already had some effect.

On the consumption side, oil consumption is projected to expand at a robust pace in emerging and developing economies, notwithstanding efficiency gains from declining energy intensity (Figure 1.19, third row, right panel). Another factor that will affect the longer-term demand for all fuels is the recent changes in the structure of relative energy prices (Figure 1.19, bottom panel). In contrast with oil prices, natural gas prices in the United States and Canada have recovered only a small share of the losses sustained during 2008–09, given rapid production growth resulting from technological advances in extracting natural gas from shale deposits. On the other hand, international coal prices have rebounded strongly with the emergence of China as a net importer.

Metals

Metals posted the second largest price rebound (after petroleum) among all commodity groups in

Figure 1.19. World Energy Market Developments



Sources: Baker Hughes; Bloomberg Financial Markets; IMF Primary Commodity Price System; International Energy Agency; and IMF staff calculations.
[1]Annual change in percent.
[2]Organization of Petroleum Exporting Countries (OPEC) membership as of the first month of each episode. Months from oil price peak on *x*-axis.
[3]North Sea: Norway and United Kingdom. North America: United States and Canada. Other FSU: other former Soviet Union.
[4]Organization for Economic Cooperation and Development stocks—deviations from five-year average (million barrels) on *x*-axis, OPEC spare capacity (million barrels a day) on *y*-axis.
[5]Averages of U.S. Producer Price Index (PPI) is for oil and gas well drilling services, oil and gas support services, and oil and gas machinery and equipment.

Table 1.3. Global Oil Demand and Production by Region

(Millions of barrels a day)

						Year-over-Year Percent Change							
	2008	2009	2010 Proj.	2009 H1	2009 H2	2003–05 Avg.	2006	2007	2008	2009	2010 Proj.	2009 H1	2009 H2
Demand													
OECD[1]	47.6	45.5	45.4	45.5	45.4	1.3	–0.6	–0.7	–3.3	–4.4	–0.2	–5.5	–3.3
North America	24.2	23.3	23.4	23.2	23.4	2.0	–0.8	0.4	–5.1	–3.6	0.5	–5.6	–1.6
Of Which:													
United States	19.8	19.1	19.1	19.0	19.1	1.7	–0.5	–0.1	–5.9	–3.7	0.1	–5.7	–1.6
Europe	15.3	14.5	14.4	14.6	14.4	0.7	0.1	–2.1	0.0	–5.4	–0.7	–4.0	–6.8
Pacific	8.1	7.7	7.6	7.7	7.6	0.4	–1.6	–1.0	–3.6	–4.8	–1.5	–7.9	–1.5
Non-OECD	38.6	39.5	41.2	38.7	40.2	4.4	4.0	4.4	3.5	2.1	4.5	0.3	3.9
Of Which:													
China	7.9	8.5	9.1	8.1	8.9	10.1	8.3	4.4	4.3	7.8	7.2	2.5	13.0
Other Asia	9.7	10.0	10.3	10.0	9.9	3.2	2.7	5.7	1.2	3.0	3.0	1.2	4.9
Former Soviet Union	4.2	3.9	4.1	3.8	4.0	1.2	2.9	2.7	0.1	–5.9	5.0	–7.4	–4.4
Middle East	7.1	7.2	7.6	7.0	7.5	4.8	4.4	3.2	8.6	2.0	4.9	1.2	2.6
Africa	3.2	3.2	3.3	3.2	3.1	4.0	0.5	4.0	3.8	–0.3	3.1	0.9	–1.4
Latin America	5.9	6.0	6.2	5.8	6.1	2.4	3.4	5.5	3.8	0.9	3.5	0.1	1.7
World	86.2	84.9	86.6	84.3	85.6	2.5	1.2	1.5	–0.3	–1.5	2.0	–2.9	0.0
Production													
OPEC (current composition)[2,3]	35.6	33.3	34.6	33.1	33.6	6.2	0.8	–1.0	2.9	–6.4	. . .	–7.6	–5.2
Of Which:													
Saudi Arabia	10.4	9.3	. . .	9.3	9.3	7.5	–1.2	–4.7	4.2	–10.5	. . .	–10.5	–10.5
Nigeria	2.1	2.1	. . .	2.0	2.2	6.0	–4.4	–4.7	–8.2	–0.4	. . .	–4.1	3.0
Venezuela	2.6	2.4	. . .	2.3	2.4	1.6	–5.8	–7.8	–2.0	–7.4	. . .	–9.7	–4.9
Iraq	2.4	2.5	. . .	2.4	2.5	2.5	4.9	9.9	14.0	2.3	. . .	–1.1	5.8
Non-OPEC	50.7	51.5	52.0	51.2	51.7	1.0	1.1	0.9	–0.3	1.5	1.1	0.4	2.5
Of Which:													
North America	13.9	14.3	14.2	14.1	14.4	2.0	–0.8	0.4	–5.1	–3.6	0.5	–5.6	–1.6
North Sea	4.3	4.1	3.9	4.3	4.0	–5.7	–7.6	–5.0	–5.1	–4.6	–6.6	–3.0	–6.2
Russia	10.0	10.2	10.4	10.1	10.3	7.7	2.2	2.4	–0.7	2.0	2.0	1.2	2.8
Other Former Soviet Union[4]	2.8	3.1	3.2	3.0	3.1	7.9	3.9	12.1	2.9	9.2	3.3	3.7	15.1
Other Non-OPEC	19.6	19.8	20.4	19.7	19.9	1.0	18.6	0.6	2.2	0.8	2.9	0.8	0.9
World	86.4	84.8	. . .	84.3	85.4	3.1	0.9	0.1	1.0	–1.8	. . .	–2.9	–0.7
Net Demand[5]	–0.2	0.1	. . .	0.0	0.2	–0.5	–0.5	1.2	–0.2	0.1	. . .	0.0	0.3

Sources: International Energy Agency, *Oil Market Report,* April 2010; and IMF staff calculations.

[1]OECD = Organization for Economic Cooperation and Development.

[2]OPEC = Organization of Petroleum Exporting Countries. Includes Angola (which joined OPEC in January 2007) and Ecuador (which rejoined OPEC in November 2007, after suspending its membership from December 1992 to October 2007).

[3]Totals refer to a total of crude oil, condensates, and natural gas liquids. Figure for 2010 is the call on OPEC implied by the demand and non-OPEC supply projections.

[4]Other Former Soviet Union includes Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

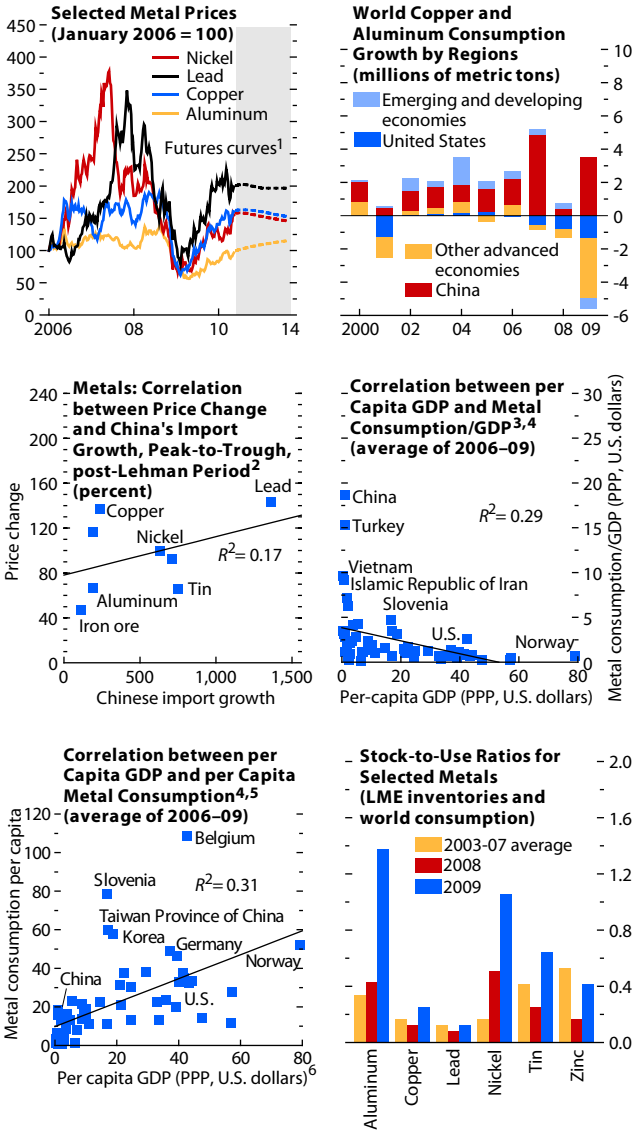
[5]Difference between demand and production. In the percent change columns, the figures are in percent of world demand.

2009. After losing more than half its precrisis peak value, the IMF daily metal index bottomed out around February 2009, doubling its value from the trough by the end of 2009, with the largest price gains posted by copper, lead, and zinc.

The sharp price rebound was largely driven by the stronger-than-expected recovery in emerging economies (Figure 1.20, top right panel), with supply factors also playing a supportive role. On the demand side, although metal consumption declined in most economies in 2009, Chinese demand grew about 24 percent, reflecting the effect of China's stimulus package and public investment (Figure 1.20, second metal panel). On the supply side, the price rebound impetus was also supported by sustained production cuts. Labor disputes (such as strikes) and stricter environmental standards (such as those pertaining to lead production and China's energy surcharge on aluminum production) have also aided the price rebound. With strong demand and limited domestic supply, China's metal imports rebounded sharply in 2009, with imports of nickel, tin, and lead growing more than fivefold between their postcrisis lows and the subsequent peaks (Figure 1.20, middle left panel).

A key factor underpinning the direction of metal prices is the growth path of metal demand in China—the largest metal consumer. During 2003–08, China's metal consumption grew at an average annual rate of about 16 percent, accounting for more than 80 percent of world demand growth. China's metal demand increased at a faster rate than output, and so its metal intensity—metal consumption per unit of GDP—increased during this period. In contrast, cross-country evidence suggests that metal intensity tends to decrease when per capita income rises (Figure 1.20, middle right panel). With the recent increases, China's metal intensity appears to be significantly above the value predicted by a cross-country regression, given its per capita income. If China's metal intensity were to normalize to cross-country norms, this would imply a slowing of its own metal consumption growth as well as slower growth in total global consumption. For example, if Chinese metal demand grew at 5 percent a year—half the projected GDP growth

Figure 1.20. Developments in Metal Markets



Sources: Bloomberg Financial Markets; World Bureau of Metal Statistics; and IMF staff calculations.

[1]Prices as of March 18, 2010.

[2]Peaks and troughs in price and import volume vary by metal. Import peaks: April 09 (tin and lead), June 09 (copper), July 09 (nickel and zinc), September 09 (aluminum). Import troughs: September 08 (copper), November 08 (nickel and zinc), December 08 (tin and lead), March 09 (aluminum). Price peaks: August 09 (nickel), January 10 (aluminum, copper, tin, lead, zinc). Price troughs: December 08 (copper, lead, zinc), February 09 (aluminum), March 09 (nickel, tin).

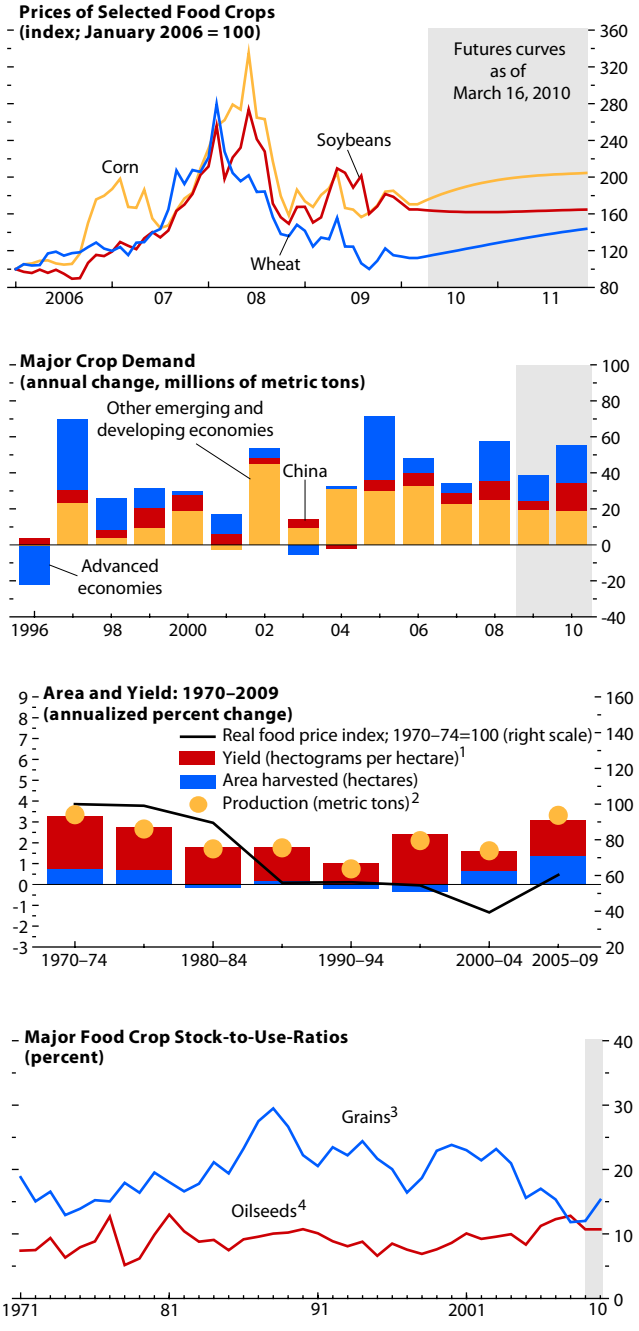
[3]Metal consumption/GDP is measured in tons per million U.S. dollars.

[4]Sample includes 59 economies.

[5]Metal consumption per capita is measured in tons per thousand people.

PPP = Purchasing Power Parity.

Figure 1.21. Recent Developments in Markets for Major Food Crops



Sources: Bloomberg Financial Markets; UN Food and Agriculture Organization; U.S. Department of Agriculture estimates; and IMF staff estimates.
[1] Area-weighted yield for nine grains, three oilseeds, cocoa, coffee, and sugar.
[2] Actual production index growth may differ slightly from the summation of yield and area growth, which provides only an approximation of production.
[3] Includes barley, corn, millet, rice, sorghum, rye, and wheat.
[4] Includes palm kernel, rapeseed, and soybean oilseeds.

rate—global metal demand would increase by only about 2½ percent annually, compared with 4½ percent in recent years (other things being equal). That said, it remains uncertain whether and when a normalization of metal intensity in China will occur. Given that China's per capita metal consumption is still low relative to other emerging economies (Figure 1.20, bottom left panel) and given forecasts of continued robust growth, including in construction, a sharp slowdown in the growth of global metal demand does not seem an imminent risk at this point.

Metal prices are expected to rise only gradually, in line with the general outlook for commodities as reflected in futures prices, given above-average stock-to-use ratios for major metals (Figure 1.20, bottom right panel).

Food

Unlike many other commodities, food prices have recovered only modestly from the trough in December 2008, although they have generally fallen by less than prices of other commodities during the Great Recession. They have started this year by broadly declining. The IMF food price index has fallen by 5 percent since the end of 2009 (Figure 1.21, top panel). Supply has been the common determinant of price developments across most food and beverage commodities since prices reached their trough. For many major crops—including corn, rice, soybeans, and wheat—expectations for supply over the current and next harvest years have been steadily outpacing those for demand. There have been some notable exceptions, such as sugar and cocoa, for which negative supply shocks in key producers have driven prices significantly higher.

Recent increases in supply for many major crops continue a trend of rising production, which began around 2005 and which appears, in part, to be a response to structurally higher demand and higher real prices. Higher food consumption in emerging economies (Figure 1.21, upper middle panel), increasing demand for crops as biofuels, and the possible impact of increasing financialization on the demand for inventories have all been identified

as contributing factors to a potentially permanent increase in demand. In response, during the five years through 2009, supply has expanded rapidly compared with historical growth rates. Rising yields have contributed to this growth, but in recent years farmers have also increased harvested acreage after a long period of decline (Figure 1.21, lower middle panel). This supply response has eased some of the market tightness, which emerged from the supply-demand deficits during 2000–07, but stock-to-use ratios for major grains—particularly corn, rice, and wheat—remain significantly below their long-term averages, reflecting the particularly rapid growth of demand in recent years and a sluggish supply response (Figure 1.21, bottom panel).

Food supply prospects over the medium term will largely depend on yield improvements rather than on increases in harvested area. Although the potential to increase harvested area exists in some regions, net additions of productive land will be partially offset by constraints on water resources, soil degradation, and increasing urbanization. Yields will be influenced by changes in climate, pests and diseases, land quality, the cost of inputs such as fertilizers, and research and development (R&D) spending. Recent decades have seen a slowdown in the growth rate of agricultural R&D spending, and—given a wide body of evidence indicating that investments in agricultural R&D have yielded high returns, albeit with long and variable lags—this suggests that food supply growth may fall short of the levels seen during much of the period since World War II (Alston, Beddow, and Pardey, 2009). With global demand growth likely to remain high, this suggests that food commodity markets may remain relatively tight and that, in the absence of continued unanticipated increases in supply, the risk to real food prices remains tilted toward the upside.

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