CHAPTER 1

# GLOBAL PROSPECTS AND POLICY ISSUES

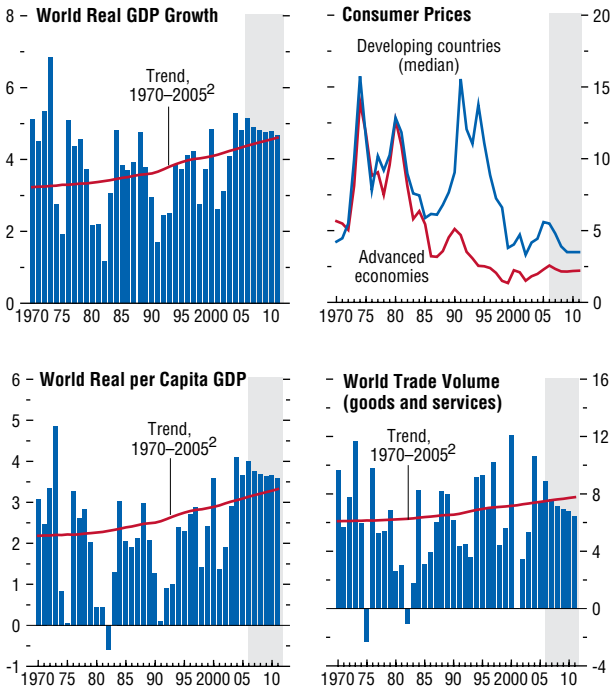
*World output increased briskly in the first half of 2006, and global growth is projected at 5.1 percent for the year as a whole before moderating to 4.9 percent in 2007 (Figure 1.1 and Table 1.1). Nevertheless, inflationary concerns, tighter conditions in financial markets, and further jumps in oil prices to new highs have highlighted downside risks as the global economy enters the fourth year of this current expansion. Other notable sources of uncertainty include the threat of an abrupt slowdown in the U.S. housing market; lingering doubts about prospects for growth in the other advanced economies; and questions about the resilience of emerging market countries in a more challenging global environment. Moreover, large global imbalances continue to prompt concerns, while the potential for protectionist pressures has increased now that the Doha Round seems to be deadlocked. Against this background, policymakers will need to respond flexibly to events and act with foresight to head off potential strains, recognizing the importance of spillovers across countries and the benefits of taking a joint approach to managing global risks and promoting a robust world economy.*

## Global Economic Environment

The global expansion was broad-based in the first half of 2006, with activity in most regions meeting or exceeding expectations, and recent indicators suggest that the pace of expansion is being maintained in the third quarter (Figure 1.2). Growth was particularly strong in the United States in the first quarter, although it slowed in the second quarter in the face of headwinds from a cooling housing market and rising fuel costs. The expansion gathered momentum in the euro area, notwithstanding a slow start to the year in Germany, and the Japanese economy continued to expand. Growth in China has accelerated even further, emerging Asia and Europe have continued to grow rapidly, and the pace of activity has picked up in Latin America. Middle Eastern oil exporters and low-

**Figure 1.1. Global Indicators[1]**
*(Annual percent change unless otherwise noted)*

The global expansion continues above trend, the fourth consecutive year of strong growth, contributing to some pickup in inflationary pressures.




[1]Shaded areas indicate IMF staff projections. Aggregates are computed on the basis of purchasing-power-parity (PPP) weights unless otherwise noted.
[2]Average growth rates for individual countries, aggregated using PPP weights; the aggregates shift over time in favor of faster-growing countries, giving the line an upward trend.

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

*(Annual percent change unless otherwise noted)*

| | | | Current Projections | | Difference from April 2006 Projections | |
|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2006 | 2007 |
| **World output** | **5.3** | **4.9** | **5.1** | **4.9** | **0.3** | **0.2** |
| Advanced economies | 3.2 | 2.6 | 3.1 | 2.7 | 0.1 | –0.1 |
| United States | 3.9 | 3.2 | 3.4 | 2.9 | — | –0.4 |
| Euro area | 2.1 | 1.3 | 2.4 | 2.0 | 0.4 | 0.1 |
| Germany | 1.2 | 0.9 | 2.0 | 1.3 | 0.7 | 0.3 |
| France | 2.0 | 1.2 | 2.4 | 2.3 | 0.3 | 0.2 |
| Italy | 1.1 | — | 1.5 | 1.3 | 0.3 | –0.1 |
| Spain | 3.1 | 3.4 | 3.4 | 3.0 | 0.1 | –0.2 |
| Japan | 2.3 | 2.6 | 2.7 | 2.1 | –0.1 | 0.1 |
| United Kingdom | 3.3 | 1.9 | 2.7 | 2.7 | 0.2 | 0.1 |
| Canada | 3.3 | 2.9 | 3.1 | 3.0 | — | –0.1 |
| Other advanced economies | 4.6 | 3.7 | 4.1 | 3.7 | — | — |
| Newly industrialized Asian economies | 5.9 | 4.5 | 4.9 | 4.4 | –0.2 | –0.1 |
| Other emerging market and developing countries | 7.7 | 7.4 | 7.3 | 7.2 | 0.4 | 0.5 |
| Africa | 5.5 | 5.4 | 5.4 | 5.9 | –0.4 | 0.4 |
| Sub-Sahara | 5.6 | 5.8 | 5.2 | 6.3 | –0.6 | 0.6 |
| Central and eastern Europe | 6.5 | 5.4 | 5.3 | 5.0 | 0.1 | 0.2 |
| Commonwealth of Independent States | 8.4 | 6.5 | 6.8 | 6.5 | 0.8 | 0.4 |
| Russia | 7.2 | 6.4 | 6.5 | 6.5 | 0.4 | 0.7 |
| Excluding Russia | 11.0 | 6.7 | 7.6 | 6.4 | 1.5 | –0.2 |
| Developing Asia | 8.8 | 9.0 | 8.7 | 8.6 | 0.5 | 0.7 |
| China | 10.1 | 10.2 | 10.0 | 10.0 | 0.5 | 1.0 |
| India | 8.0 | 8.5 | 8.3 | 7.3 | 1.0 | 0.3 |
| ASEAN-4 | 5.8 | 5.1 | 5.0 | 5.6 | — | –0.1 |
| Middle East | 5.5 | 5.7 | 5.8 | 5.4 | 0.2 | –0.1 |
| Western Hemisphere | 5.7 | 4.3 | 4.8 | 4.2 | 0.4 | 0.6 |
| Brazil | 4.9 | 2.3 | 3.6 | 4.0 | 0.1 | 0.5 |
| Mexico | 4.2 | 3.0 | 4.0 | 3.5 | 0.5 | 0.4 |
| *Memorandum* | | | | | | |
| European Union | 2.4 | 1.8 | 2.8 | 2.4 | 0.4 | 0.1 |
| World growth based on market exchange rates | 3.9 | 3.4 | 3.8 | 3.5 | 0.2 | — |
| **World trade volume (goods and services)** | **10.6** | **7.4** | **8.9** | **7.6** | **0.9** | **0.2** |
| Imports | | | | | | |
| Advanced economies | 9.1 | 6.0 | 7.5 | 6.0 | 1.2 | 0.4 |
| Other emerging market and developing countries | 16.4 | 11.9 | 13.0 | 12.1 | 0.1 | 0.2 |
| Exports | | | | | | |
| Advanced economies | 8.8 | 5.5 | 8.0 | 6.0 | 1.4 | –0.1 |
| Other emerging market and developing countries | 14.6 | 11.8 | 10.7 | 10.6 | –0.2 | 0.2 |
| **Commodity prices (U.S. dollars)** | | | | | | |
| Oil[1] | 30.7 | 41.3 | 29.7 | 9.1 | 14.9 | 6.2 |
| Nonfuel (average based on world commodity export weights) | 18.5 | 10.3 | 22.1 | –4.8 | 11.9 | 0.7 |
| **Consumer prices** | | | | | | |
| Advanced economies | 2.0 | 2.3 | 2.6 | 2.3 | 0.3 | 0.2 |
| Other emerging market and developing countries | 5.6 | 5.3 | 5.2 | 5.0 | –0.1 | 0.2 |
| **London interbank offered rate (percent)[2]** | | | | | | |
| On U.S. dollar deposits | 1.8 | 3.8 | 5.4 | 5.5 | 0.3 | 0.4 |
| On euro deposits | 2.1 | 2.2 | 3.1 | 3.7 | 0.1 | 0.3 |
| On Japanese yen deposits | 0.1 | 0.1 | 0.5 | 1.1 | 0.1 | 0.1 |

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during July 5–August 2, 2006. See Statistical Appendix for details and groups and methodologies.

[1]Simple average of spot prices of U.K. Brent, Dubai, and West Texas Intermediate crude oil. The average price of oil in U.S. dollars a barrel was $53.35 in 2005; the assumed price is $69.20 in 2006, and $75.50 in 2007.

[2]Six-month rate for the United States and Japan. Three-month rate for the euro area.

income countries in Africa have also maintained impressive growth rates.

Sustained high rates of global growth have absorbed spare capacity and led to some emerging signs of inflationary pressures. While estimates of potential GDP are always subject to uncertainty, output gaps seem to be closing in much of the world (Figure 1.3), while buoyant demand for fuel and raw materials has contributed to record high prices for oil and other commodities. Headline inflation in many of the major advanced economies has for some time been above central bank comfort zones, pushed up by rising oil prices, but there are now signs of increases in core inflation, in market-based and survey measures of inflation expectations, and in unit labor costs, particularly in the United States (Figure 1.4). In emerging markets, a number of countries—including Argentina, India, Russia, South Africa, Turkey, and Venezuela—are facing price pressures following sustained periods of rapid growth or large exchange rate depreciations.

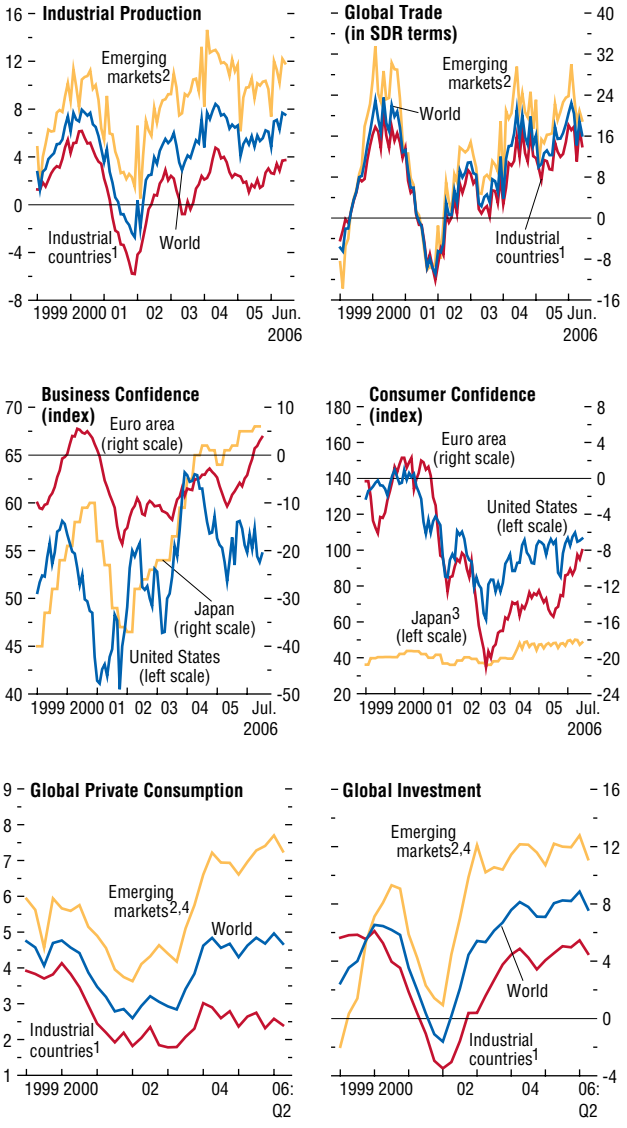
Against this background, central banks in the major advanced economies have taken steps to tighten monetary conditions. The U.S. Federal Reserve continued to raise the Fed funds rate through June, although pausing in August, seeking to balance inflation concerns against signs that the U.S. expansion is beginning to slow (Figure 1.5). The European Central Bank has raised its policy rate further, and the Bank of Japan has moved away from quantitative easing and in July raised the overnight policy rate from zero to 25 basis points. Central banks in Australia, Sweden, and the United Kingdom have also tightened in recent months. Longer-term government bond yields have increased, although they still remain quite low in real terms relative to average levels over the past 25 years (Figure 1.6).

Since late 2005, the U.S. dollar has depreciated against the euro, and to a lesser degree the yen, partly reversing its appreciation during the previous 12 months (Figure 1.7). The recent depreciation of the U.S. dollar seems to reflect in part perceptions that with the U.S. expansion at a more mature stage, interest differentials

## Figure 1.2. Current and Forward-Looking Indicators

*(Percent change from a year ago unless otherwise noted)*

Industrial production, trade, and confidence indicators suggest that the pace of expansion is well sustained.




Sources: Business confidence for the United States, the Institute for Supply Management; for the euro area, the European Commission; and for Japan, Bank of Japan. Consumer confidence for the United States, the Conference Board; for the euro area, the European Commission; and for Japan, Cabinet Office; all others, Haver Analytics.

[1] Australia, Canada, Denmark, euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.

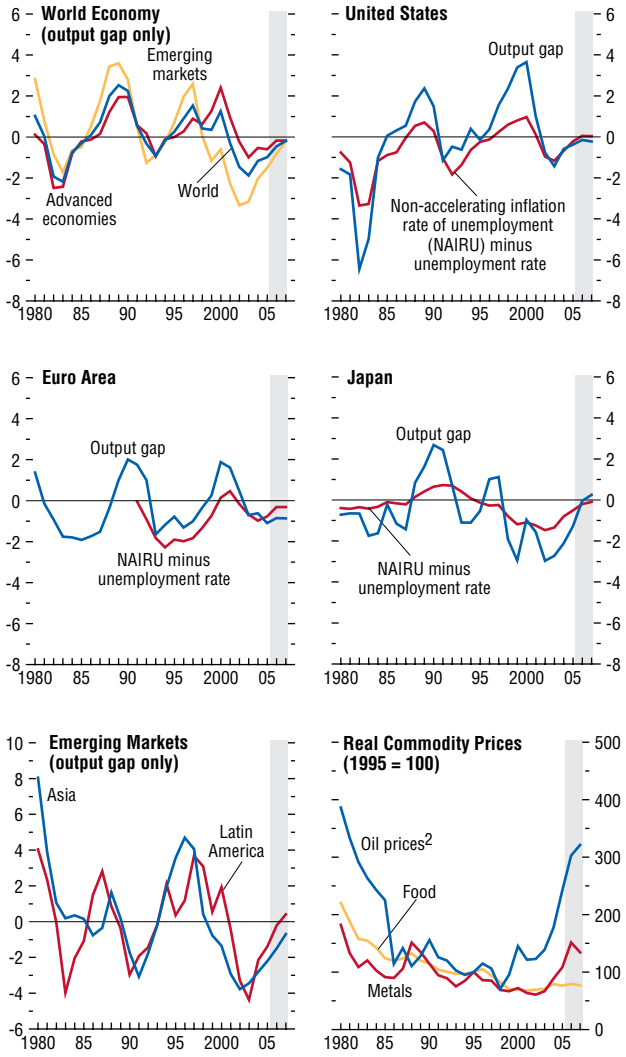
[2] Argentina, Brazil, Bulgaria, Chile, China, Colombia, Czech Republic, Estonia, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, the Philippines, Poland, Romania, Russia, Singapore, Slovak Republic, Slovenia, South Africa, Taiwan Province of China, Thailand, Turkey, Ukraine, and Venezuela.

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

[4] Data for China, India, Pakistan, and Russia are interpolated.

## Figure 1.3. Measures of the Output Gap and Capacity Pressures[1]

Sustained growth has reduced output gaps and lowered unemployment rates. Tighter capacity constraints in commodity sectors have contributed to sharp increases in oil and metals prices.




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

[1]Estimates of the non-accelerating inflation rate of unemployment (NAIRU) come from the OECD. Estimates of the output gap, expressed as a percent of potential GDP, are based on IMF staff calculations.

[2]Simple average of spot prices of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil.

vis-à-vis the other major currencies are likely to narrow, as well as increased market concern with global imbalances as the U.S. current account deficit has continued to widen and the surpluses in parts of emerging Asia and oil exporters have increased further (Figure 1.8). In real effective terms, the U.S. dollar is now close to its average level since 1980, while the euro is somewhat above its long-run average in real terms, and the yen somewhat below. Volatility in currency markets has also risen back to more normal levels, in part reflecting the fact that monetary policy decisions have become more data dependent and harder to predict.

Rising inflation concerns and tightening by major central banks had a marked impact on financial markets during March–June, 2006. Starting in March, currencies of some countries with particularly wide current account deficits—Iceland, New Zealand, and Hungary—depreciated sharply. There was a more general retreat from equity markets and emerging market currencies in May and June (Figure 1.9 and Box 1.1). Particularly affected were asset prices that had previously risen sharply (such as equities in Colombia and India), and the exchange rates of countries with high current account deficits (such as Hungary, South Africa, and Turkey).[1] With these developments coming on top of already overheated conditions in some countries, a number of central banks in emerging market countries have raised rates to calm financial conditions and to head off inflationary pressures. Since July, however, conditions have been more stable.

The IMF staff's assessment is that these market events should not significantly slow the overall momentum of global activity, although growth in some individual countries (such as Turkey) may be dampened. For the most part, asset price declines seem to have represented corrections after major run-ups rather than a fundamental reassessment of economic risks. It

[1]These developments are examined in depth in Chapter I of the IMF's September 2006 *Global Financial Stability Report.*

is striking that the impact on emerging market external bond spreads was relatively subdued, in part reflecting progress made in strengthening fiscal positions and the buildup of international reserve cushions, as well as recent debt buyback programs that have improved the supply-demand balance in these markets. Welcome progress has also been made in improving the structure of public debt, with increased sales of local currency debt to foreign investors, although some of the wind was also taken from these markets in the recent correction. Nonetheless, recent market pressures have provided a timely reminder of the need for continuing progress to improve public sector balance sheets and to address other vulnerabilities.

Oil and other commodity prices continued at elevated levels in the first eight months of 2006, with petroleum and metals prices reaching new highs (Appendix 1.1). Oil prices have been supported by tight spare capacity in global markets—both in production and refining—against the background of buoyant GDP growth, security concerns in the Middle East, and continued risks to production in some large producers elsewhere (notably Nigeria). Metals prices also have been boosted by strong demand growth, especially in emerging markets, by capacity shortages, and by labor disputes. Prices of food and other agricultural products rose in relative terms in the first part of 2006, although they have not participated in the price boom affecting oil and metals in recent years. Against this background, some commentators have suggested that speculative activity may have contributed to recent price surges, particularly in oil and metals. However, an IMF staff analysis, reported in Chapter 5, suggests that while speculators may have played a role in providing liquidity to markets, speculative position-taking does not seem to have been a significant driver leading commodity price movements.

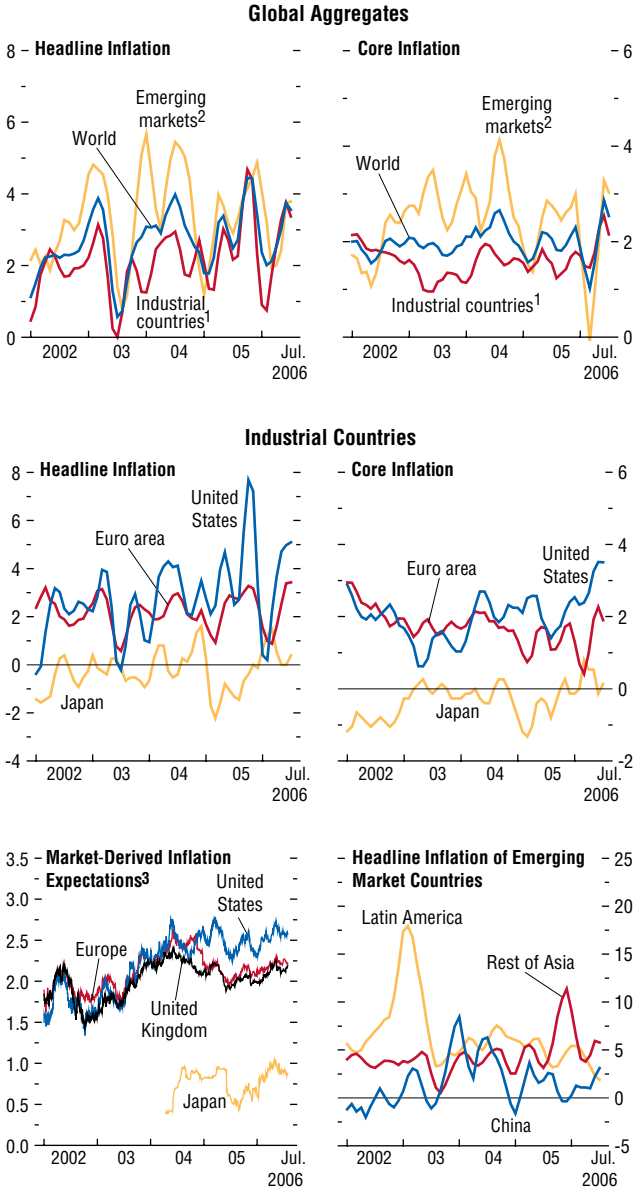
## Outlook and Short-Term Risks

Notwithstanding tightening financial conditions, the baseline forecast for world output

### Figure 1.4. Global Inflation

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

Measures of core inflation and inflation expectations in industrial countries have picked up recently, while the picture in emerging market countries is more mixed.




Sources: Haver Analytics; and IMF staff calculations.

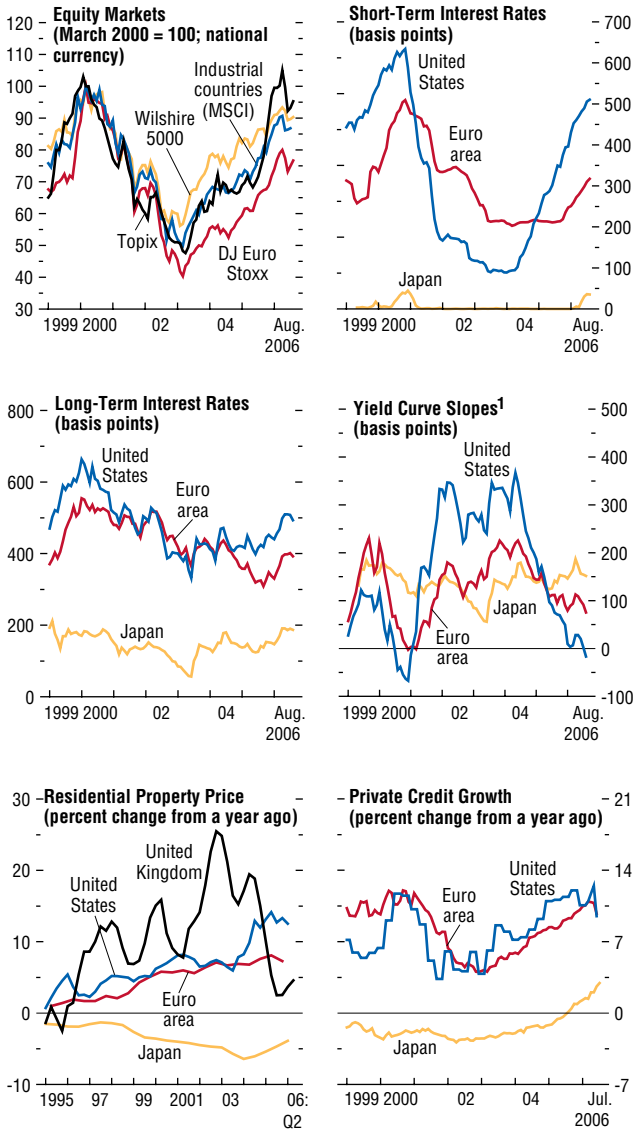
[1]Australia, Canada, Denmark, euro area, Japan, New Zealand, Norway, Sweden, the United Kingdom, and the United States.

[2]Brazil, Bulgaria, Chile, China, Estonia, Hong Kong SAR, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Poland, Singapore, South Africa, Taiwan Province of China, and Thailand.

[3]In percent; nominal minus inflation-indexed yields on 10-year securities.

## Figure 1.5. Developments in Mature Financial Markets

Short-term interest rates have increased in most industrial countries, while long-term interest rates have also risen.




Sources: Bloomberg Financial Markets, LP; CEIC Data Company Limited; Haver Analytics; OECD; national authorities; IMF, *International Financial Statistics;* and IMF staff calculations.

[1]Ten-year government bond minus three-month treasury bill rate.

growth has been marked up to 5.1 percent in 2006 and 4.9 percent in 2007, ¼ percentage point above the April 2006 WEO projection in both years (Figure 1.10).[2] This would be the strongest four-year period of global expansion since the early 1970s. This favorable outlook depends on the view that inflationary pressures will be successfully contained with modest further interest rate increases by the major central banks, that the growth of domestic demand will be better balanced across the advanced economies, that emerging and developing countries will largely avoid capacity bottlenecks, and that global financial market conditions will be more stable now that excessive valuations in some sectors have been reduced. More specifically:

- The U.S. economy would grow 3.4 percent in 2006, before slowing to 2.9 percent in 2007, broadly in line with potential. A cooling housing market would continue to dampen private consumption and residential investment, but corporate investment should be supported by high capacity use and strong profitability.
- Growth in the euro area would rise to 2.4 percent in 2006—its highest rate in six years—before moderating to 2 percent in 2007. Stronger corporate balance sheets have paved the way for higher investment, rising employment, and a better balanced expansion. The slowing in 2007 would largely reflect scheduled tax increases in Germany.
- The Japanese economy would grow by 2.7 percent in 2006, based on solid domestic demand, before easing to 2.1 percent in 2007.
- Growth in emerging markets and developing countries would remain very strong at 7.3 percent in 2006, and slow only marginally to 7.2 percent in 2007. China would sustain growth around 10 percent—an upward revision relative to the April 2006 *World Economic Outlook*—

[2]This forecast is broadly in line with the private sector consensus and projections from other international agencies such as the OECD for 2006, while for 2007 the IMF staff projection for global growth is about ¼ percentage point above the consensus.

while India and Russia would also continue to grow rapidly. Latin American countries would continue to lag, although growth prospects have been marked up in this region.

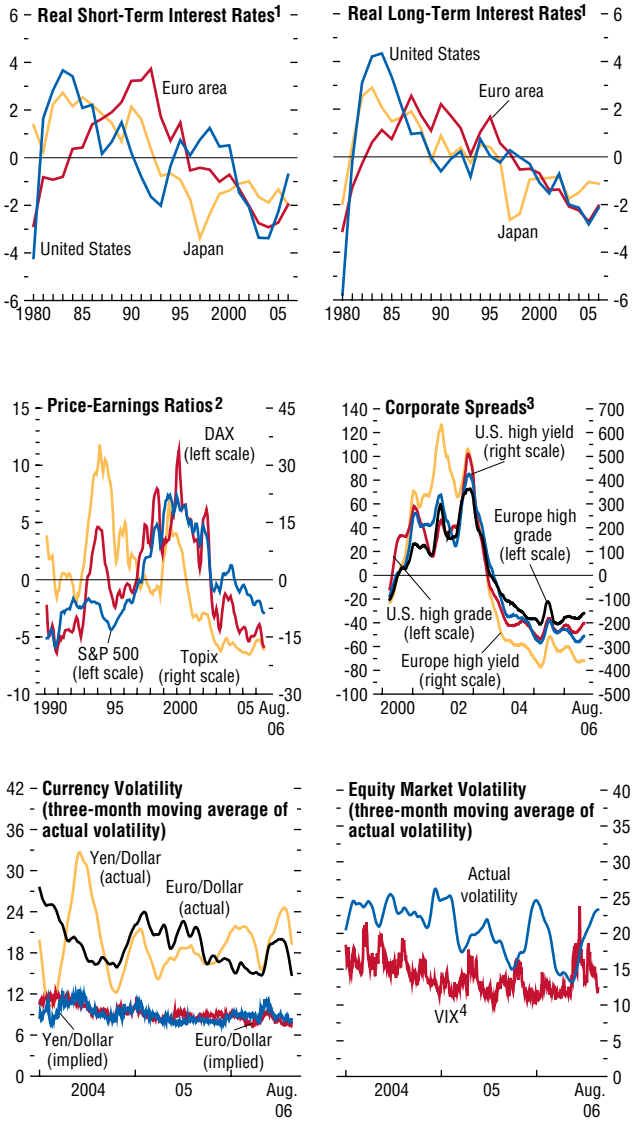
- Headline inflation in the advanced economies would increase modestly to 2.6 percent in 2006, and start to come down in 2007 as the upward impetus from oil price increases recedes. Inflation pressures would also generally be contained in emerging market and developing countries.
- The U.S. current account deficit would rise further—to 6.9 percent of GDP in 2007—with large surpluses continuing in Japan, parts of emerging Asia, and oil-exporting countries in the Middle East and elsewhere.
- Private capital flows to emerging market and developing countries would slow from the torrid pace of 2005, but with the overall net current account surplus of these countries rising further, the pace of accumulation of international reserves would remain high (Table 1.2).

The risks to this baseline forecast would seem, however, increasingly tilted to the downside, even more so than at the time of the April 2006 *World Economic Outlook*. As reflected in the fan chart for global growth (Figure 1.11), which is based on the past forecasting record and an assessment of the current distribution of risks, in the IMF staff's view there is a one in six chance of growth in 2007 falling to 3¼ percent or less, a significant slowdown compared to the last four years.

Before considering these downside risks in more detail, it is worth highlighting sources of potentially even more rapid growth. These would seem to be concentrated in emerging markets, where growth has been underpredicted by IMF staff in recent years. In China, in particular, investment could be even higher than projected, in part reflecting abundant banking system liquidity, although such an outcome would further increase concerns about a boom-bust investment cycle. More broadly in emerging markets, a return to calmer global financial conditions could presage a resurgence of portfolio inflows, which could foster easy monetary

## Figure 1.6. Mature Financial Market Indicators

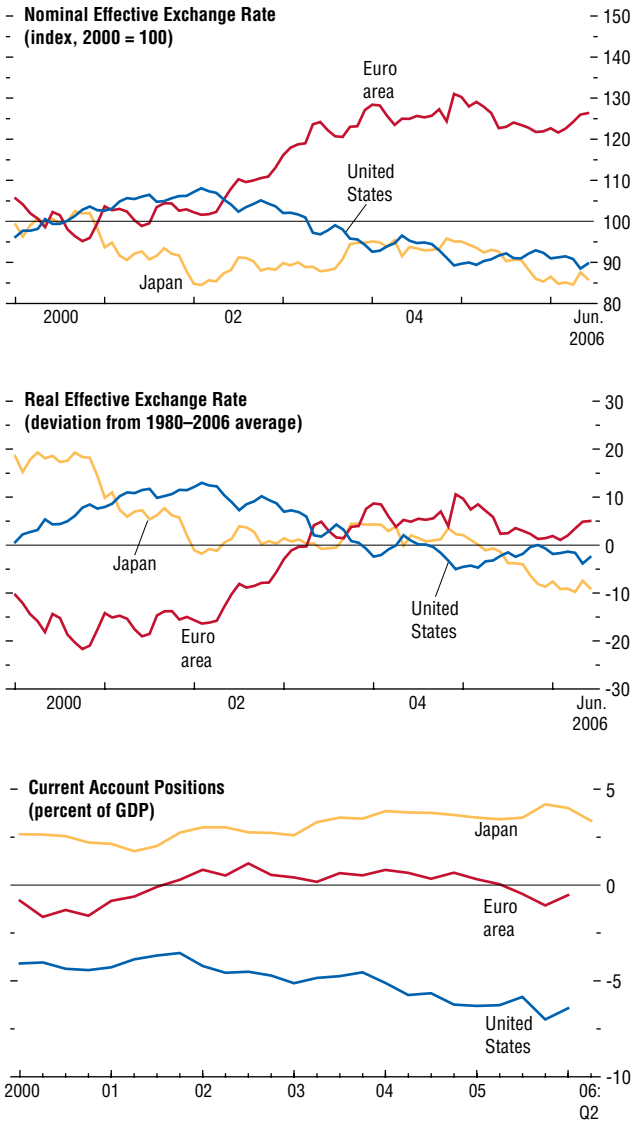
Interest rates in real terms have risen closer to long-run averages and equity price-earnings ratios are generally below trend, while market volatility has recently increased.




Sources: Bloomberg Financial Markets, LP; and IMF staff calculations.
[1]Measured as deviations from 1980–2006 average.
[2]Twelve-month forward looking price-earnings ratios measured as three-month moving average of deviations from 1990–2006 average.
[3]Measured as three-month moving average of deviations from 2000–06 average.
[4]VIX is the Chicago Board Options Exchange volatility index. This index is calculated by taking a weighted average of implied volatility for the eight S&P 500 calls and puts.

### Figure 1.7. External Developments in Major Advanced Economies

The U.S. dollar has depreciated modestly in real effective terms since late 2005, but its current account deficit has remained high. The euro area's current account is close to balance, while Japan retains a sizable current account surplus.




Sources: Haver Analytics; and IMF staff calculations.

conditions, a rebound in asset prices, and a further strengthening of domestic demand. In the advanced economies, the main upside potential would seem to be in business investment, given strong corporate profitability and rising capacity utilization.

Turning now to the downside, markets have been concerned that a continued buildup of inflation pressures in advanced economies could require a more aggressive monetary policy response to cool the growth momentum, particularly in the United States. Clearly, there are risks in this direction coming from tightening capacity constraints and the continuing potential for high headline inflation to seep into price expectations and bolder wage demands. Cost push pressures have risen in the United States in recent quarters, reflecting both rising employee compensation and slowing productivity as the expansion matures, although unit labor cost growth has remained subdued in the euro area and Japan (Figure 1.12).

A related risk to the outlook comes from the continued potential for supply-side shocks in the oil market, which could give a further upward impetus to international oil prices, thus exacerbating inflationary pressures while cooling household demand. In the baseline forecast, the international oil price is expected to average $75 a barrel in 2007, close to the peak reached in early August (see Appendix 1.1). As emphasized in past issues of the *World Economic Outlook*, up to now the global economy has been able to absorb quite well the run-up in oil prices, reflecting that—to a considerable degree—the price increases have been driven by strong demand growth rather than supply constraints, and that central banks have had the credibility to focus on core rather than headline inflation. The decline in energy intensity of global output compared to the 1970s has also played a role in containing the impact of oil price increases. However, with spare capacity remaining at recent very low levels, supply concerns have played a growing role in pushing up oil prices, and a major disruption in a large producer or a further escalation of security

concerns in the Middle East could well lead to another upward oil price spike.[3] Over time, investment in new production and refining capacity both inside and outside the Organization of the Petroleum Exporting Countries (OPEC), diversification into alternative energy sources, and increased conservation efforts by consumers responding to price incentives should restore spare capacity to more comfortable levels, but the lags are lengthy, and considerable uncertainty remains about the pace and extent of these responses.

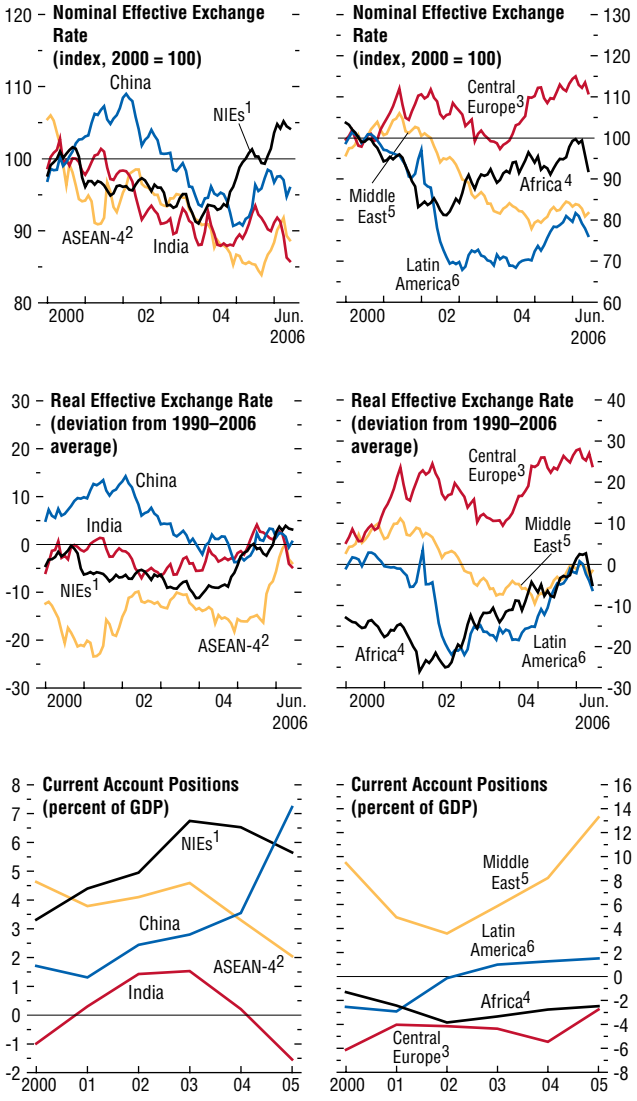
There are also supply-side risks from nonfuel commodity prices. In total, nonfuel commodities represent almost twice as large a share of world trade as fuels and can have an important impact on the global economic environment, both for consumers and the exporters, which (like oil) tend to be in emerging market and developing countries. In fact, for a number of these countries, nonfuel commodity price increases have provided significant terms-of-trade gains or at least offset some of the losses from higher oil import bills (Figure 1.13), while in some countries like Chile government revenues from these sectors are an important share of total revenues.

Chapter 5 of this report discusses the prospects for nonfuel commodity markets in more detail. Its analysis suggests that, as with oil, recent price increases have been substantially driven by a surge in demand, particularly in rapidly growing, large emerging markets like China. This surge in demand has outstripped supply capacity, especially in metals where supply responses are subject to longer lags than in agriculture. However, unlike the petroleum market, nonfuel commodity prices are expected to retreat more rapidly from recent highs as new capacity comes into operation, although not to fall back to earlier levels—in part because higher energy costs have boosted costs of production. Nonfuel com-

[3]Oil options prices suggest that in August 2006 markets put a 10 percent chance on Brent oil exceeding $90 a barrel in December 2006.

## Figure 1.8. External Developments in Emerging Market Countries

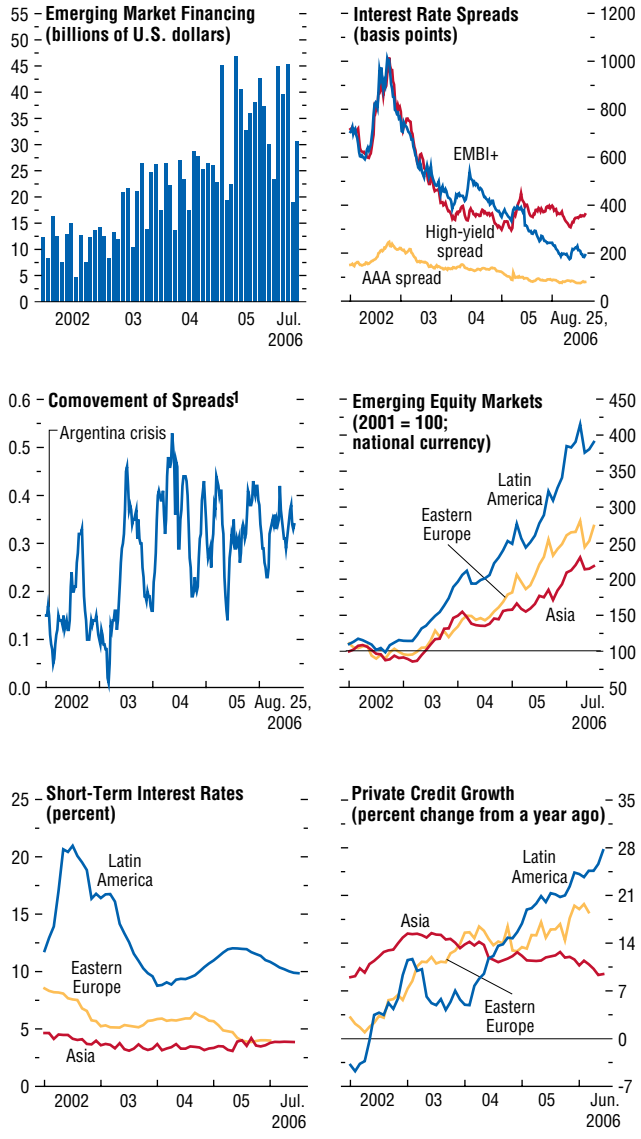
Movements in nominal exchange rates over the past year have generally moved real effective exchange rates in emerging market countries closer to historical averages. Current account surpluses in China and the Middle East have continued to rise.




Source: IMF staff calculations.
[1]Newly industrialized economies (NIEs) include Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.
[2]Indonesia, Malaysia, the Philippines, and Thailand.
[3]Czech Republic, Hungary, and Poland
[4]Botswana, Burkina Faso, Cameroon, Chad, Republic of Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Uganda, and Zambia.
[5]Bahrain, Egypt, I.R. of Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, and Republic of Yemen.
[6]Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

## Figure 1.9. Emerging Market Financial Conditions

Notwithstanding some recent corrections, asset prices in most emerging markets remain close to peak levels, while sovereign risk spreads are still close to all-time lows.




Sources: Bloomberg Financial Markets, LP; Capital Data; IMF, *International Financial Statistics;* and IMF staff calculations.

[1]Average of 30-day rolling cross-correlation of emerging market debt spreads.

modity exporters will thus need to be cautious in managing the uncertain stream of foreign exchange earnings and government revenue from these sources.

A key risk on the demand side is that the continued cooling of advanced-economy housing markets will weaken household balance sheets and undercut aggregate demand. At this point, concerns center on the United States, although other markets, such as those in Ireland, Spain, and the United Kingdom, also still seem overvalued by most conventional measures. In the United States, the April 2006 issue of the *World Economic Outlook* suggested that, by 2005, average home prices had risen around 10–15 percent above levels consistent with fundamentals. Recent data indicate that the market is now softening quite rapidly, with home sales and mortgage applications weakening, housing starts falling, and house price increases dropping. The baseline U.S. growth forecast assumes house price growth will continue to slow, implying a drag on domestic demand from the housing market of approximately ½ percentage point in each of 2006 and 2007. However, if the housing market were to cool more abruptly, IMF staff estimates suggest that this could subtract up to an additional 1 percentage point from GDP growth relative to the baseline. To be sure, house price softening in other countries like Australia and the United Kingdom, coming off larger upward spikes in house prices than experienced in the United States, has been absorbed thus far with relatively mild and brief economic slowdowns. Nevertheless, the concern remains that a sharp adjustment in the housing sector would generate strong headwinds for the U.S. economy.

Other demand-side risks relate to the extent to which expansions in Europe and Japan will be sustained by increasing strength of household demand, reducing reliance on exports and exposure to a slowdown of demand in the United States. Such a rebalancing appears to be under way, but concerns remain, particularly in Europe, where both job growth and wage increases remain modest in the face of slow

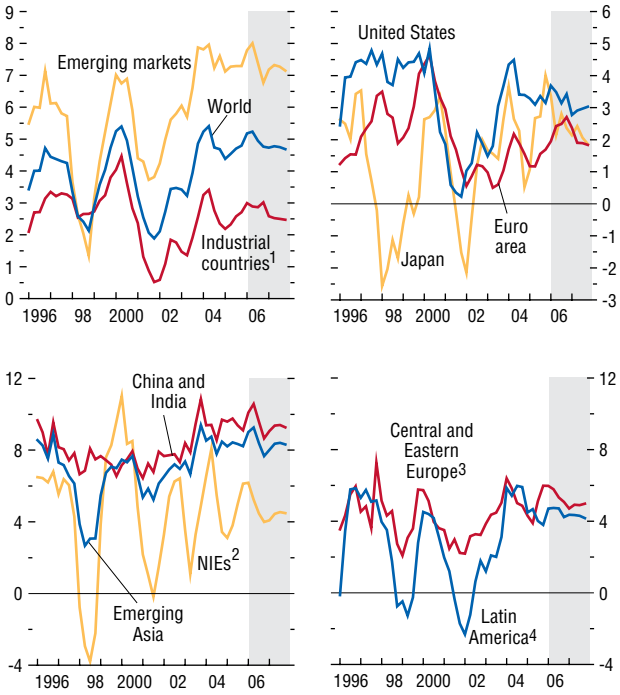
productivity growth and labor market rigidities. There are also uncertainties related to the ongoing process of fiscal consolidation in these countries; deficit reduction is necessary in the face of upcoming demographic pressures on spending and dependency ratios, but could cause short-term shifts in aggregate demand that are hard to predict. An example is the 3 percentage point increase in the value added tax (VAT) in Germany in early 2007, which is expected to lower GDP by around ½ percentage point in 2007 relative to 2006, but the impact could even be larger. Such fiscal-related uncertainty is also significant in Italy, where the new government is expected to bring in an adjustment package to address its deep-seated fiscal imbalances.

Recent developments have provided a healthy reminder that emerging markets remain susceptible to turbulence in global financial markets, notwithstanding progress in reducing underlying vulnerabilities. Countries particularly at risk would include those with still weak public sector balance sheets and less well anchored inflation expectations. Moreover, recent experience has underlined that a buildup in current account deficits from private saving-investment imbalances and an associated rapid growth of bank credit can also cause difficulties when expectations about the availability of external funding change (see Box 1.1).[4] Adverse events affecting emerging markets become more likely in the context of higher interest rates and financial market volatility in the advanced economies, and could be initiated by global shocks that prompt a reduction in risk appetite, a downward shift in emerging market growth prospects, and a weakening of non-oil commodity prices. As illustrated in Box 1.2, a sharp reversal of market sentiment away from emerging markets could put downward pressures on exchange rates that would need to

[4]Recent experience with the rapid growth in bank credit to the household sector is examined in detail in Chapter II of the IMF's September 2006 *Global Financial Stability Report*.

**Figure 1.10. Global Outlook**
*(Real GDP; percent change from four quarters earlier)*

World growth is expected to remain very strong in 2006, with only a modest deceleration in 2007.




Sources: Haver Analytics; and IMF staff estimates.
[1]Australia, Canada, Denmark, euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.
[2]Newly industrialized economies (NIEs) include Hong Kong SAR, Korea, Singapore, and Taiwan Province of China.
[3]Czech Republic, Estonia, Hungary, Latvia, Lithuania, and Poland.
[4]Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

### Table 1.2. Emerging Market and Developing Countries: Net Capital Flows[1]

*(Billions of U.S. dollars)*

| | 1995–97 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | | | | | | | | | | | |
| Private capital flows, net[2] | 199.7 | 61.2 | 75.4 | 58.2 | 64.6 | 77.3 | 165.6 | 205.9 | 238.5 | 211.4 | 182.2 |
| Private direct investment, net | 120.3 | 159.8 | 177.3 | 168.4 | 179.4 | 150.6 | 159.1 | 176.9 | 255.9 | 263.3 | 246.1 |
| Private portfolio flows, net | 61.3 | 34.1 | 60.7 | 12.5 | –78.2 | –91.7 | –10.9 | 13.9 | 3.2 | –31.1 | –4.6 |
| Other private capital flows, net | 18.1 | –132.7 | –162.6 | –122.7 | –36.6 | 18.4 | 17.3 | 15.1 | –20.6 | –20.8 | –59.2 |
| Official flows, net | 3.7 | 39.1 | 13.0 | –44.2 | –3.3 | –4.3 | –53.1 | –64.7 | –151.8 | –238.7 | –174.1 |
| Change in reserves[3] | –104.3 | –29.6 | –98.4 | –132.3 | –121.9 | –200.6 | –362.7 | –513.5 | –592.5 | –666.3 | –747.9 |
| *Memorandum* | | | | | | | | | | | |
| Current account[4] | –88.5 | –50.2 | 31.6 | 117.3 | 87.1 | 133.3 | 229.6 | 303.8 | 514.7 | 666.8 | 720.4 |
| **Africa** | | | | | | | | | | | |
| Private capital flows, net[2] | 7.0 | 9.2 | 9.9 | 1.7 | 8.2 | 4.1 | 6.8 | 16.1 | 29.4 | 24.9 | 21.7 |
| Private direct investment, net | 4.3 | 6.3 | 8.6 | 7.6 | 23.1 | 13.4 | 15.3 | 16.7 | 28.6 | 27.6 | 27.8 |
| Private portfolio flows, net | 4.8 | 4.3 | 9.1 | –1.8 | –7.7 | –1.3 | –0.1 | 5.5 | 4.5 | 5.1 | 4.2 |
| Other private capital flows, net | –2.0 | –1.4 | –7.8 | –4.1 | –7.2 | –8.0 | –8.4 | –6.2 | –3.6 | –7.9 | –10.3 |
| Official flows, net | –2.4 | 3.9 | 1.8 | 0.6 | –2.7 | 3.0 | 1.6 | 1.0 | –14.4 | –17.8 | –1.3 |
| Change in reserves[3] | –6.2 | 3.5 | –0.4 | –12.8 | –9.7 | –5.6 | –11.5 | –32.8 | –42.2 | –62.0 | –75.2 |
| **Central and eastern Europe** | | | | | | | | | | | |
| Private capital flows, net[2] | 27.2 | 27.1 | 36.9 | 39.8 | 11.8 | 53.2 | 51.4 | 70.4 | 113.5 | 88.8 | 84.8 |
| Private direct investment, net | 11.7 | 19.3 | 22.8 | 24.2 | 24.2 | 25.5 | 16.0 | 34.4 | 47.7 | 56.7 | 44.4 |
| Private portfolio flows, net | 4.5 | –1.2 | 5.7 | 3.2 | 0.5 | 1.6 | 6.2 | 26.2 | 20.4 | 1.5 | 11.4 |
| Other private capital flows, net | 10.9 | 9.1 | 8.5 | 12.4 | –12.8 | 26.0 | 29.1 | 9.8 | 45.4 | 30.6 | 29.1 |
| Official flows, net | 0.5 | 1.0 | –2.5 | 1.7 | 6.1 | –7.8 | –5.2 | –6.7 | –8.5 | –3.2 | –2.2 |
| Change in reserves[3] | –15.7 | –9.4 | –12.0 | –6.5 | –4.4 | –20.4 | –12.5 | –14.6 | –46.3 | –18.8 | –17.1 |
| **Commonwealth of Independent States[5]** | | | | | | | | | | | |
| Private capital flows, net[2] | –1.3 | –8.6 | –13.3 | –27.7 | 7.2 | 15.7 | 17.7 | 7.5 | 37.6 | 18.8 | 5.4 |
| Private direct investment, net | 4.6 | 5.6 | 4.7 | 2.3 | 5.0 | 5.2 | 5.4 | 12.8 | 13.3 | 18.0 | 17.5 |
| Private portfolio flows, net | 1.5 | 0.4 | –0.9 | –10.0 | –1.2 | 0.4 | –0.5 | 8.2 | –3.2 | 1.0 | –1.8 |
| Other private capital flows, net | –7.4 | –14.6 | –17.1 | –20.0 | 3.4 | 10.2 | 12.8 | –13.5 | 27.5 | –0.1 | –10.3 |
| Official flows, net | –1.1 | 1.5 | –2.0 | –5.7 | –5.0 | –10.4 | –8.8 | –7.3 | –22.5 | –30.2 | –4.5 |
| Change in reserves[3] | –1.4 | 12.6 | –6.3 | –20.3 | –14.5 | –15.1 | –32.9 | –55.0 | –76.6 | –115.0 | –139.2 |
| **Emerging Asia[6]** | | | | | | | | | | | |
| Private capital flows, net[2,7] | 91.2 | –53.6 | 0.2 | 4.7 | 20.2 | 20.6 | 68.1 | 130.4 | 64.0 | 97.9 | 69.0 |
| Private direct investment, net | 54.0 | 56.9 | 70.9 | 59.8 | 50.8 | 50.5 | 68.2 | 57.8 | 99.6 | 94.0 | 96.0 |
| Private portfolio flows, net | 20.7 | 9.0 | 54.1 | 19.6 | –50.0 | –60.1 | 6.4 | 5.2 | –12.7 | –13.1 | –8.4 |
| Other private capital flows, net[7] | 16.5 | –119.5 | –124.9 | –74.7 | 19.4 | 30.2 | –6.5 | 67.3 | –22.9 | 17.0 | –18.5 |
| Official flows, net | –3.2 | 18.9 | 1.6 | –13.8 | –13.2 | 3.0 | –20.7 | –9.1 | –11.7 | –8.4 | –12.0 |
| Change in reserves[3] | –41.8 | –52.7 | –84.8 | –59.5 | –85.8 | –154.4 | –235.8 | –340.4 | –286.6 | –344.8 | –331.4 |

be met by prompt interest rate hikes to contain a pickup in inflation. Growth would be dampened in the short term, but stronger public sector balance sheets should provide a basis for emerging markets to avoid deeper crises provided that they continue to manage policies prudently and respond quickly to emerging stresses.

Lastly, while the probability and potential risks of an avian flu pandemic are impossible to assess with any certainty, a worse-case outbreak scenario could have extremely high human and economic costs, particularly in developing countries in Africa and Asia (see Appendix 1.2 of the April 2006 *World Economic Outlook*).

## Unwinding Global Imbalances

Large global imbalances continue to be a concern for the outlook. To be clear, the existence of significant current account deficits and surpluses does not by itself imply the threat of instability. In an increasingly globalized world economy, the free movement of capital across borders permits periods in which countries' savings and investment rates may diverge, imply-

**Table 1.2 *(concluded)***

| | 1995–97 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Middle East**[8] | | | | | | | | | | | |
| Private capital flows, net[2] | 8.3 | 14.8 | –4.4 | –11.6 | –7.1 | –20.0 | 4.4 | –19.6 | –20.0 | –31.8 | –17.3 |
| Private direct investment, net | 5.0 | 9.5 | 4.3 | 4.7 | 9.9 | 9.6 | 17.4 | 9.1 | 17.4 | 20.9 | 13.8 |
| Private portfolio flows, net | 2.6 | –4.0 | –8.5 | –1.2 | –12.2 | –17.9 | –14.1 | –17.4 | –31.1 | –29.9 | –20.7 |
| Other private capital flows, net | 0.7 | 9.2 | –0.1 | –15.1 | –4.7 | –11.8 | 1.0 | –11.3 | –6.4 | –22.8 | –10.5 |
| Official flows, net | 5.7 | –0.2 | 8.1 | –20.8 | –13.8 | –9.6 | –24.5 | –33.7 | –64.6 | –166.5 | –151.8 |
| Change in reserves[3] | –13.9 | 8.3 | –2.5 | –31.6 | –11.1 | –2.9 | –33.9 | –47.6 | –108.0 | –85.7 | –135.7 |
| **Western Hemisphere** | | | | | | | | | | | |
| Private capital flows, net[2] | 67.3 | 72.3 | 46.1 | 51.3 | 24.1 | 3.8 | 17.3 | 1.1 | 14.0 | 12.7 | 18.5 |
| Private direct investment, net | 40.6 | 62.2 | 66.1 | 69.8 | 66.5 | 46.5 | 36.8 | 46.0 | 49.2 | 46.1 | 46.6 |
| Private portfolio flows, net | 27.2 | 25.6 | 1.3 | 2.7 | –7.6 | –14.4 | –8.8 | –13.9 | 25.4 | 4.3 | 10.7 |
| Other private capital flows, net | –0.5 | –15.5 | –21.3 | –21.1 | –34.8 | –28.2 | –10.7 | –31.1 | –60.6 | –37.7 | –38.8 |
| Official flows, net | 4.2 | 14.0 | 5.9 | –6.3 | 25.3 | 17.5 | 4.5 | –9.0 | –30.1 | –12.6 | –2.2 |
| Change in reserves[3] | –25.4 | 8.1 | 7.6 | –1.6 | 3.5 | –2.2 | –36.0 | –23.1 | –32.8 | –39.9 | –49.3 |
| ***Memorandum*** | | | | | | | | | | | |
| **Fuel exporting countries** | | | | | | | | | | | |
| Private capital flows, net[2] | –2.4 | 2.8 | –27.4 | –57.5 | –13.2 | –11.7 | 12.0 | –22.2 | –4.8 | –58.0 | –58.1 |
| **Other countries** | | | | | | | | | | | |
| Private capital flows, net[2] | 202.1 | 58.4 | 102.8 | 115.7 | 77.7 | 89.1 | 153.6 | 228.1 | 243.3 | 269.4 | 240.3 |

[1]Net capital flows comprise net direct investment, net portfolio investment, and other long- and short-term net investment flows, including official and private borrowing. In this table, Hong Kong SAR, Israel, Korea, Singapore, and Taiwan Province of China are included.
[2]Because of data limitations, flows listed under "private capital flows, net" may include some official flows.
[3]A minus sign indicates an increase.
[4]The sum of the current account balance, net private capital flows, net official flows, and the change in reserves equals, with the opposite sign, the sum of the capital account and errors and omissions. For regional current account balances, see Table 25 of the Statistical Appendix.
[5]Historical data have been revised, reflecting cumulative data revisions for Russia and the resolution of a number of data interpretation issues.
[6]Consists of developing Asia and the newly industrialized Asian economies.
[7]Excluding the effects of the recapitalization of two large commercial banks in China with foreign reserves of the Bank of China ($45 billion), net private capital flows to emerging Asia in 2003 were $113.1 billion while other private capital flows net to the region amounted to $38.5 billion.
[8]Includes Israel.

ing substantial current account deficits and surpluses. Such financial flows can be positive for the world economy, representing the shift of resources from parts of the world with abundant savings relative to investment opportunities to areas offering higher rates of return to capital. However, past experience suggests that high current account deficits relative to GDP have typically not been sustained for long periods, either because domestic saving and investment patterns change or because countries run up against financing constraints—for example, because of shifting perceptions about relative rates of return across countries or because international investors resist a continued buildup in country exposure in their portfolios. In this latter situation, savings and investment behavior has had to adjust to bring current account positions back in line with available financing. The key issues then are the sustainability of the current pattern of global imbalances and whether the eventual adjustment will be orderly or disorderly.

To assess the sustainability of the current pattern of global imbalances, one must understand the source of the imbalances and how they have been financed. A variety of factors have been suggested to explain the current situation, including the positive impact of the strong U.S. productivity performance on asset prices, household wealth, and consumption; the emergence of a sizable fiscal deficit in the United States since the turn of the century; the investment slowdown in emerging Asia outside China since the Asian Crisis; the highly liquid conditions in world financial markets, especially since the collapse of the information technology bubble; the willingness of emerging market countries,

particularly in Asia, to build high levels of international reserves; and the need to recycle oil exporters' surpluses after the recent escalation of petroleum prices.[5]

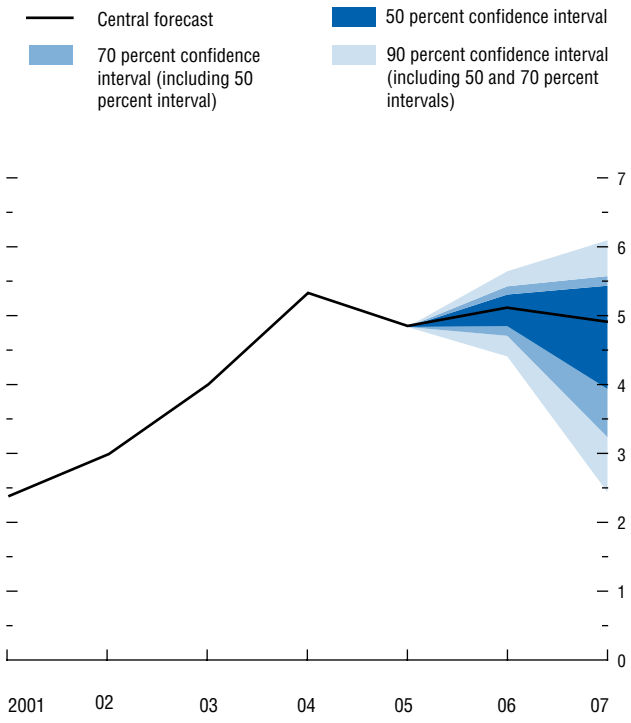
An element of the story that has received increasing attention recently is the role played by the U.S. financial system in attracting foreign savings in increasingly integrated global capital markets (see, for example, Caballero, Farhi, and Gourinchas, 2006.). The depth and liquidity of U.S. financial markets, together with the rapid pace of innovation and development of new products offering wide and increasing opportunities for effective risk management, have made the United States an attractive destination for global investors' funds. At the same time, financial innovations and new products have increased opportunities for "consumption smoothing," in particular for households to increase spending out of wealth generated from the large increases in U.S. equity and house prices. A notable part has been played by the rapid rise in the asset-backed securities markets, particularly mortgage-backed securities, which now account for over 10 percent of global bond markets, together with borrowing instruments that have facilitated equity extraction and cash-flow management. These market developments have played a part in allowing the continuing decline in the U.S. savings rate since the mid-1990s, while also offering a major conduit for capital inflows to the United States.

Chapter 4 of this report offers some perspective on this phenomenon, aiming to assess the degree to which financial systems in advanced economies have migrated from relationship-based to arm's length financing structures and the implications of this shift for economic cycles. It suggests that while all financial systems have moved in the direction of arm's length systems,

### Figure 1.11. Prospects for World GDP Growth[1]

*(Percent)*

Global growth is projected to remain about 5 percent in 2006–07, but the risks are slanted to the downside, especially next year.




Source: IMF staff estimates.

[1]This so-called fan chart shows the uncertainty around the *World Economic Outlook* central forecast with 50, 70, and 90 percent probability intervals. See Box 1.3 in the April 2006 *World Economic Outlook* for details.

[5]See discussions in previous issues of the *World Economic Outlook*, including "Global Imbalances—A Saving and Investment Perspective" in the September 2005 issue, and "Oil Prices and Global Imbalances" in the April 2006 issue.

the process has gone farthest in the United States, and in some respects the gap between the United States and most others has widened. It also provides some evidence that arm's length structures provide greater potential for consumption smoothing and that the dynamism of the U.S. financial system has played a significant role in attracting financing for the U.S. current account deficit. The chapter cautions, however, that arm's length systems may provide less support for activity in the face of asset price corrections.

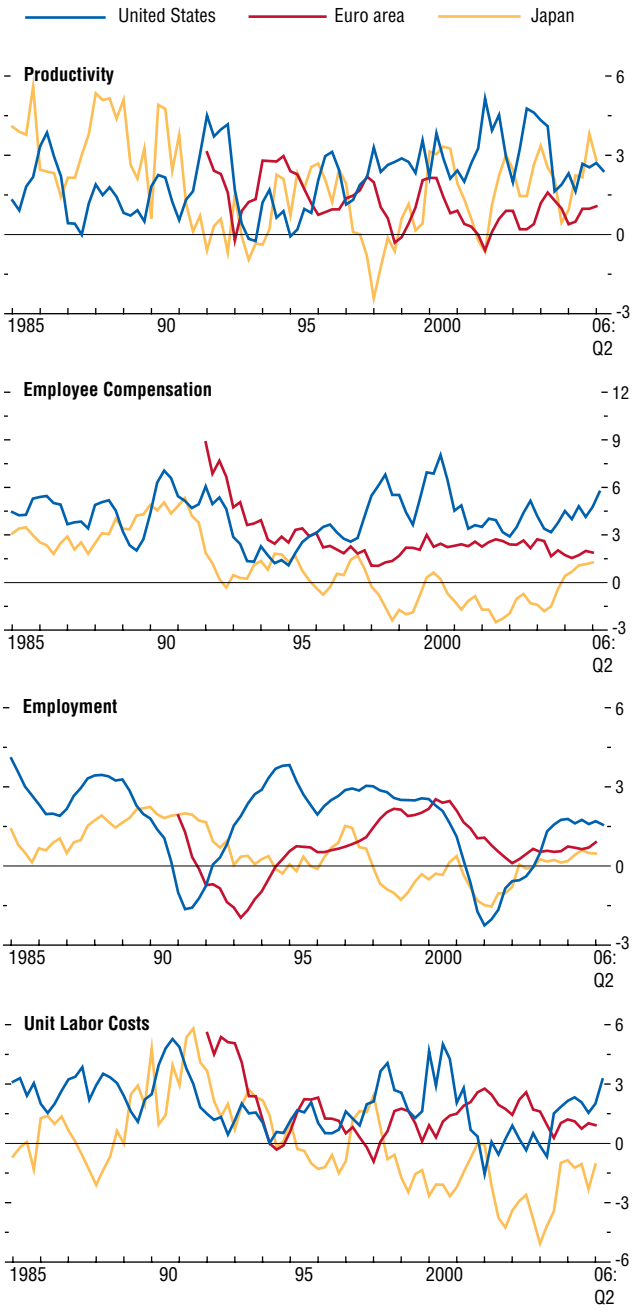
It is beyond the scope of this report to allocate the causality precisely among the various factors contributing to global imbalances. To a large extent, different explanations complement rather than compete with each other, and their relative importance has varied over time. However, what is clear is that while the explanations help one to understand why the imbalances have emerged and have been sustained over a period of time, none of them implies that large imbalances can be sustained indefinitely.

To be sure, the United States' high and widening current account deficits in recent years have been financed without undue strain on the global financial system, with real long-term interest rates remaining on the low side. The pattern of such financing has varied over time, with direct investment and portfolio equity inflows playing an important role in the late 1990s, and debt-related flows providing the bulk of financing more recently, including a significant but not dominant role played by official flows corresponding to the accumulation of large international reserves by a number of countries. Moreover, recent months have seen some developments that, over time, will be helpful in reducing the imbalances, including some depreciation of the U.S. dollar, stronger growth in U.S. exports, news that the U.S. fiscal deficit in the present fiscal year will be lower than earlier predictions, rising growth of domestic demand in the euro area and Japan, and some increased exchange rate flexibility in Asian countries. However, the underlying prob-

## Figure 1.12. Productivity Developments in Selected Advanced Economies[1]

*(Percent change from four quarters earlier)*

Productivity performance has remained strong in the United States and Japan, with the euro area lagging. Unit labor costs have generally been contained, but accelerated recently in the United States.

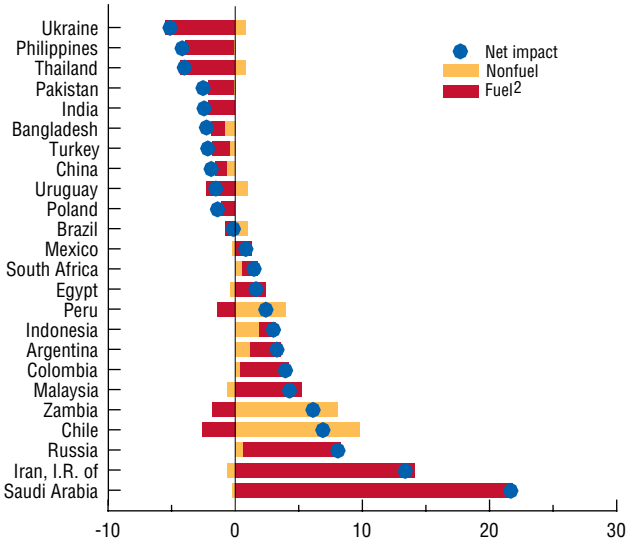



Sources: Haver Analytics; OECD, *Economic Outlook*; and IMF staff calculations.
[1]Estimates are for non-farm business sector for the United States, and the whole economy for the euro area and Japan.

### Figure 1.13. Impact of Commodity Price Movements on Trade Balances in Emerging Market and Developing Countries[1]

*(Percent of 2005 GDP)*

For a number of countries, terms-of-trade gains from nonfuel commodity price increases have defrayed losses from higher oil import bills.




Source: IMF staff calculations.
[1]Impact of change in commodity price movement since 2002 on trade balance in 2005.
[2]Fuel includes oil, natural gas, and coal.

lem remains little diminished. Medium-term projections assuming constant real effective exchange rates show the U.S. current account deficit remaining close to 2 percent of global GDP, with Asia and oil exporters continuing to run substantial surpluses (Figure 1.14). These projections imply that the United States would need to continue absorbing a rising share of world asset portfolios. However, eventually, the buildup of U.S.-based assets in global asset portfolios would approach saturation, and an adjustment of current account imbalances would be required.

The most likely outcome is still a gradual and orderly unwinding of the imbalances over a number of years. With the housing market cooling in the United States, private saving is likely to rise as the asset price boost to wealth accumulation fades away. By contrast, consumption growth would accelerate in emerging Asia (especially China) as precautionary savings motives moderate, and absorption by oil exporters is also expected to rise, particularly in the Middle East where the authorities are advancing ambitious investment plans. This shift in relative growth of domestic demand, accompanied by a sustained depreciation of the U.S. dollar in real terms and real exchange rate appreciation in surplus countries, notably in parts of Asia and oil exporters, would contribute to a more normal pattern of current accounts over a number of years. Such an adjustment could occur as a market-led process, without the need for major shifts in policy frameworks.

However, as discussed in Box 1.3, such a smooth, market-led process is likely to succeed only if investors are prepared to continue increasing the share of their portfolios in U.S. assets for many years. If not, there would be some risk of a disorderly unwinding, involving a more rapid fall of the U.S. dollar, volatile conditions in financial markets, rising protectionist pressures, and a significant hit to global output. The potentially heavy cost of such a disorderly unwinding underlines the importance of joint efforts to reduce the imbalances in a timely fashion, as discussed further below.

## Policy Challenges

The heightened uncertainty about economic prospects, the associated increased volatility in financial markets, and the concerns over global imbalances have made it all the more important for policymakers to respond flexibly to events, to act with foresight to head off potential strains, and to take a joint approach to managing global risks.

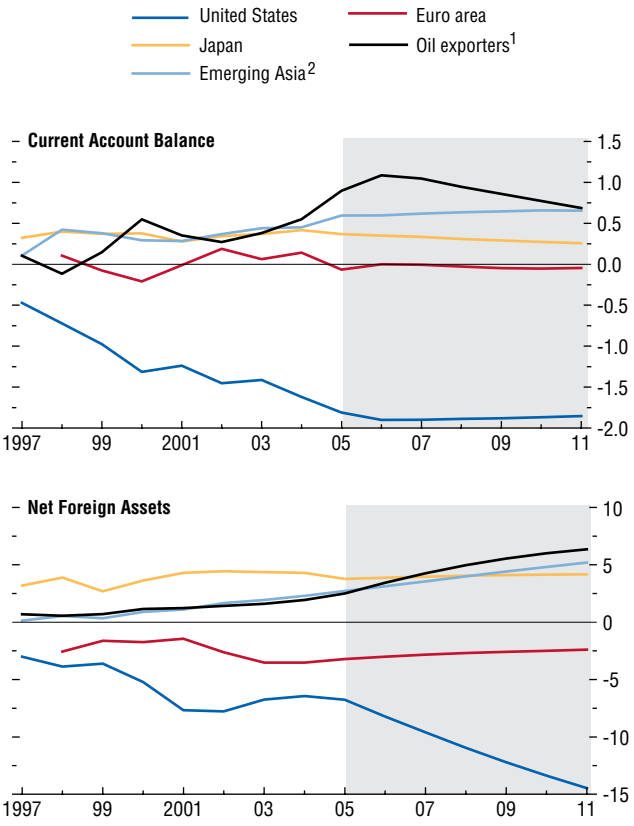
The environment is particularly challenging for the major central banks that provide the linchpin for global stability. In the United States, monetary policy faces the difficult situation of rising inflation in a slowing economy, and the Federal Reserve will need to continue to monitor incoming data carefully while clearly communicating its assessment to the market. Given the importance of keeping inflation expectations firmly in check, some further policy tightening may still be needed. In Japan, while recent price data have confirmed the end of entrenched deflation and the transition from zero interest rates has been handled smoothly, interest rate increases going forward should be gradual since there is little danger of an inflationary surge, while reemergence of deflation would be costly. In the euro area, further interest rate increases are likely to be needed if the expansion develops as expected, but for now inflation pressures seem broadly contained, and faced by continuing downside risks, policymakers can afford to be cautious in tightening the monetary policy stance.

Policymakers in emerging markets must also adjust to the more testing environment, being careful to respond promptly to any emerging strains. A major challenge in China and some other emerging Asian countries is to manage a transition to more flexible exchange rates that would allow necessary appreciation to take place and provide more room for monetary policy to respond to shifts in the global environment and in domestic conditions. For similar reasons, Russia and some other oil exporters could also benefit from more flexible exchange rates. Emerging market countries that rely heavily on external financing (such as those in Eastern Europe) or that still have high public debt (in

### Figure 1.14. Current Account Balances and Net Foreign Assets

*(Percent of world GDP)*

Under the baseline forecast, which assumes unchanged real effective exchange rates, global current account imbalances remain sizable through the projection period, implying a continued increase in the U.S. net foreign liability position.




Sources: Lane and Milesi-Ferretti (2006); and IMF staff estimates.

[1]Algeria, Angola, Azerbaijan, Bahrain, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, I.R. of Iran, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, Syrian Arab Republic, Turkmenistan, United Arab Emirates, Venezuela, and the Republic of Yemen.

[2]China, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan Province of China, and Thailand.

## Box 1.1. Capital Flows to Emerging Market Countries: a Long-Term Perspective

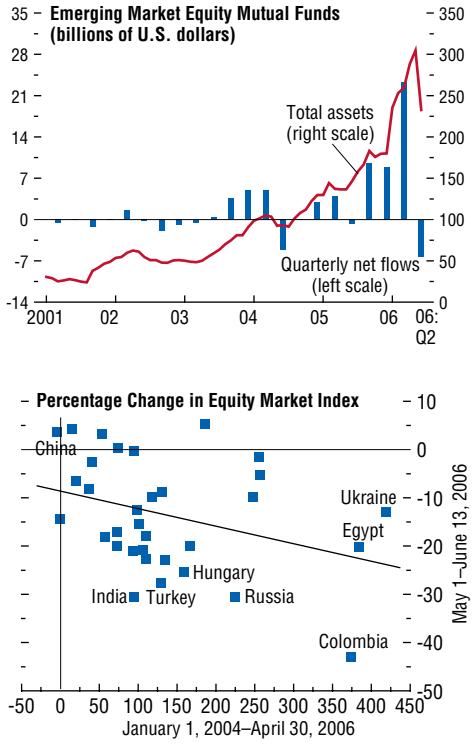
After a period of relative calm, volatility in global financial markets increased sharply in the first half of 2006. The first turbulence occurred in late February–early March when several Middle Eastern stock markets fell sharply. Next, exchange rates in Iceland and New Zealand—two countries that had built up substantial external imbalances in previous years—came under pressure. Finally, in early May a more broad-based correction of emerging markets' currencies and equity valuations set in, taking place in the context of tightening monetary conditions in the main currency areas. The sharpest corrections in asset prices were in those markets where foreign investors had taken large exposures and that had appreciated the most in 2005 and early 2006.[1] Dedicated emerging market equity funds saw outflows of $15.8 billion between mid-May and end-June of this year, after having received inflows of more than $50 billion between the beginning of 2005 and mid-May 2006 (see the first figure). Often the outflows triggered substantial exchange rate depreciations, exceeding 10 percent (from mid-May until end-June) in countries such as Turkey, South Africa, and Colombia.

While this reversal of portfolio equity flows has received considerable attention, such flows constitute only a small share of all capital flows to emerging market countries. Over the past 30 years, they have accounted for less than 6 percent of all net inflows, and even in 2005, their share was only 15 percent. In comparison, net foreign direct investment (FDI) has been more than seven times as large over the past 20 years, and net debt flows—public and private combined—almost nine times as large. Hence, a broader reversal of capital flows beyond portfolio equity investments could be far more disruptive for emerging markets. So far, there have been no indications that other flows have been severely affected by recent developments:

Note: The main authors of this box are Bas B. Bakker and Johannes Wiegand.

[1]These developments are reviewed in more detail in the September 2006 *Global Financial Stability Report*.

### Emerging Market Countries: Equity Market Developments




Source: IMF staff calculations.

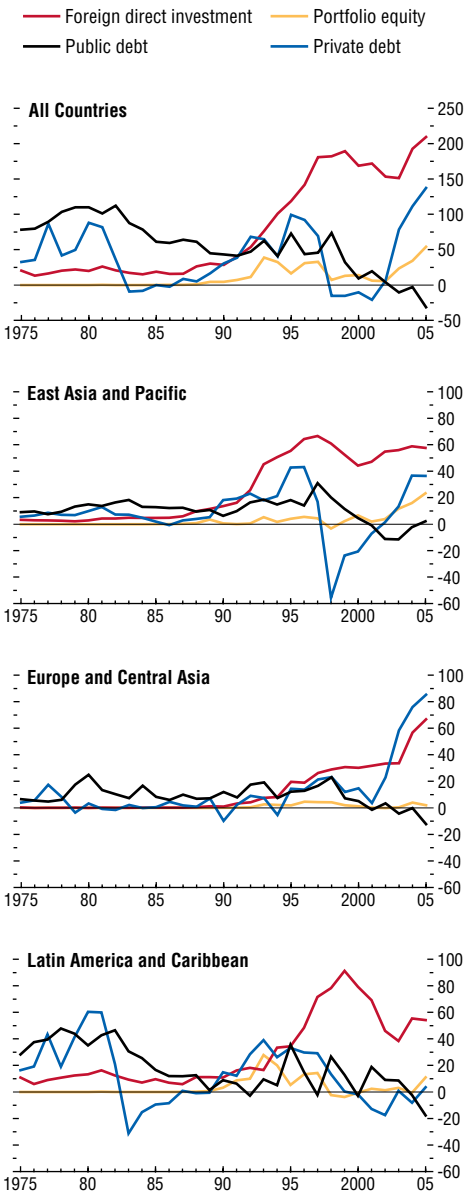
sovereign bond spreads, for example, have remained close to record lows.

To assess the risks of a wider reversal, it is helpful to analyze the historical experience with capital flows to middle- and low-income countries over the past three decades, focusing on the three main recipient regions: East Asia and the Pacific, emerging Europe and Central Asia, and Latin America and the Caribbean (see the second figure).

- Net FDI inflows have been the most stable category, and also the most important since the early 1990s. FDI flows do vary cyclically around a secular increase—flows to Latin America halved between 1999 and 2002

**Net Capital Flows to Middle- and Low-Income Countries, 1975–2005**

*(Billions of real U.S. dollars, base year = 2000)*




Sources: World Bank, Global Development Finance database; and IMF staff calculations.

before recovering during the current expansion phase[2]—but year-to-year changes have tended to be relatively small.

- Public sector debt flows have also been fairly stable. Moreover, their importance as a source of financing has declined sharply in recent years. Since 2003, public debt flows have even turned negative, as many sovereigns have used their improved fiscal positions to reduce external debt levels. This may help explain why most sovereign bond spreads have remained relatively unaffected by the recent turmoil.
- In contrast, net debt flows to the private sector have been much more volatile.[3] There have been three periods when private debt flows surged rapidly: the late 1970s–early 1980s; the mid-1990s; and, more recently, since about 2003. The first two episodes corresponded to region-specific, boom-bust credit cycles, culminating in the Latin American debt crisis of 1982 and the Asian financial crisis of 1997. In both cases, net debt flows to the private sector turned negative in the crisis and remained so for several years, imposing severe contractions on the affected economies. The more recent surge reflects to a large part lending by banks in advanced economies to emerging Europe and Central Asia,[4] and to a lesser extent a revival of private debt flows to East Asia, notably China. In emerging Europe, private sector debt has replaced foreign direct investment as the primary source of external financing; in 2005, it accounted for 60 percent of net capital inflows.

[2]This drop in part reflected a slowdown in privatizations in the late 1990s and the chilling effect on infrastructure investments of private investors' losses in Argentina after the crisis.

[3]Historically, there has been a strong and positive correlation between portfolio equity flows and private debt flows to emerging market countries (0.78 in the 1990–2005 period). For individual regions, the correlation is not as strong, but is still positive.

[4]In 2005, $46 billion of all net private debt flows to Emerging Europe and Central Asia were medium- and long-term bank loans, $32 billion short-term debt flows, and $19 billion bond financing.

### Box 1.1 *(concluded)*

Historical experience would caution that the recent heavy debt flows to Eastern Europe and Asia could again prove unsustainable—even though there are good reasons why the recent surge may be less risky than previous ones. For example, in China and Russia—the two countries that have received the largest private debt inflows in recent years—risks are mitigated by large net foreign assets of the public sector, reflecting high reserve cushions and relatively low external debt levels.[5] In central and southeastern Europe, a mitigating factor is the presence of well-supervised and largely foreign-owned banks. Moreover, in some countries progress toward joining the European Union and the prospect of Economic and Monetary Union (EMU) membership may boost investor confidence sufficiently to render a reversal in capital flows less likely.

In spite of these factors, the risks associated with the recent surge in private debt flows should not be discounted. The debt flow reversals in Latin America in the 1980s and in East Asia in the 1990s were also considered unlikely—until they occurred. Many central and eastern European countries run large current account deficits, which would be difficult to finance if private debt flows dried up (also see the discussion in the Emerging Europe section of Chapter 2). The presence of foreign banks does not eliminate such risks: bank inflows could suddenly stop if the parent bank decides to reduce its exposure to the region. In the event of a reversal, fixed exchange rates—which remain widespread in the region—might be difficult to maintain. Floating the exchange rate would help to restore external balance, but would weaken balance sheets, as a sharp depreciation would increase the burden of the private sector's foreign currency debts (including to the domestic banking system), a process illustrated by earlier experience elsewhere. Of course, vulnerabilities differ across countries, but regional spillovers and common lender contagion could lead to problems for the region at large. Furthermore, even if private debt inflows did not reverse but "only" fell back to historical averages, this would still imply a substantial decline in net external financing, and could force sharp adjustments on many economies.

[5]In both China and Russia, the net foreign asset position of the economy as a whole is positive, see Lane and Milesi-Ferretti (2006). This distinguishes them from most other recipient countries of large private debt inflows in recent years.

Latin America and elsewhere) will need to be adaptable, taking advantage of opportunities to reduce these vulnerabilities further, while being quick to respond to adverse developments to maintain market confidence and preserve hard-won inflation-fighting credentials.

At the same time, reforms needed to sustain longer-term growth should not be put on the back burner. In most of the major advanced economies, fiscal consolidation in the face of aging populations remains a huge challenge. Some welcome progress has been made in reducing high fiscal deficits over the past three years, particularly in France, Japan, and the United States, while Canada's surplus has been maintained (Table 1.3). However, for most countries, trajectories going forward look unambitious, even assuming steady growth. As a result, fiscal deficits and net public debt would still be quite high at the end of the five-year projection period (with the notable exception of Canada), especially considering the rising fiscal costs of an increasingly elderly population. Italy and Japan face particularly large tasks, while fiscal consolidation efforts in the United States take on particular importance in light of the need to raise national savings and contain the current account deficit. Tackling these fiscal concerns effectively will require setting suitably ambitious medium-term budget objectives, as well as addressing deep-seated issues, including putting social security systems on a sound

## Table 1.3. Major Advanced Economies: General Government Fiscal Balances and Debt[1]

*(Percent of GDP)*

| | 1990–99 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Major advanced economies** | | | | | | | | | | |
| Actual balance | –3.3 | –0.2 | –1.7 | –4.0 | –4.8 | –4.3 | –3.6 | –3.2 | –3.2 | –2.4 |
| Output gap[2] | 0.6 | 2.5 | 1.1 | –0.3 | –1.1 | –0.6 | –0.7 | –0.3 | –0.3 | — |
| Structural balance[2] | –3.4 | –1.5 | –2.2 | –3.9 | –4.3 | –4.0 | –3.4 | –3.1 | –3.1 | –2.4 |
| **United States** | | | | | | | | | | |
| Actual balance | –2.8 | 1.6 | –0.4 | –3.8 | –4.8 | –4.6 | –3.7 | –3.1 | –3.2 | –2.2 |
| Output gap[2] | 1.5 | 4.4 | 1.8 | — | –0.9 | –0.3 | –0.2 | 0.1 | –0.1 | — |
| Structural balance[2] | –3.4 | 0.1 | –1.1 | –3.8 | –4.5 | –4.4 | –3.6 | –3.1 | –3.2 | –2.2 |
| Net debt | 53.7 | 39.5 | 38.3 | 41.0 | 43.8 | 45.4 | 46.1 | 46.3 | 47.3 | 48.3 |
| Gross debt | 69.5 | 57.2 | 56.6 | 58.9 | 61.9 | 62.6 | 62.7 | 62.5 | 63.4 | 63.8 |
| **Euro area** | | | | | | | | | | |
| Actual balance | . . . | –1.0 | –1.9 | –2.6 | –3.0 | –2.7 | –2.2 | –2.0 | –1.9 | –1.5 |
| Output gap[2] | . . . | 1.8 | 1.6 | 0.5 | –0.7 | –0.7 | –1.2 | –0.7 | –0.6 | — |
| Structural balance[2] | . . . | –1.7 | –2.4 | –2.6 | –2.7 | –2.4 | –2.0 | –1.7 | –1.6 | –1.6 |
| Net debt | . . . | 57.7 | 57.5 | 57.5 | 59.0 | 60.1 | 61.0 | 60.1 | 59.7 | 57.8 |
| Gross debt | . . . | 69.6 | 68.3 | 68.1 | 69.3 | 69.8 | 70.6 | 69.8 | 69.2 | 66.8 |
| **Germany[3]** | | | | | | | | | | |
| Actual balance | –2.6 | 1.3 | –2.8 | –3.7 | –4.0 | –3.7 | –3.3 | –2.9 | –2.4 | –2.0 |
| Output gap[2] | 0.2 | 1.8 | 1.7 | 0.5 | –0.9 | –0.9 | –1.2 | –0.5 | –0.5 | — |
| Structural balance[2,4] | –2.1 | –1.2 | –2.8 | –3.3 | –3.3 | –3.3 | –3.0 | –2.6 | –2.1 | –2.0 |
| Net debt | 40.5 | 51.5 | 52.1 | 54.3 | 57.8 | 60.1 | 62.5 | 63.5 | 64.2 | 65.3 |
| Gross debt | 50.7 | 58.7 | 57.9 | 59.6 | 62.8 | 64.8 | 66.4 | 68.0 | 68.5 | 69.2 |
| **France** | | | | | | | | | | |
| Actual balance | –3.7 | –1.5 | –1.6 | –3.2 | –4.2 | –3.7 | –2.9 | –2.7 | –2.6 | –1.7 |
| Output gap[2] | –1.3 | 1.2 | 1.0 | — | –0.9 | –0.9 | –1.7 | –1.4 | –1.2 | — |
| Structural balance[2,4] | –2.8 | –2.1 | –2.2 | –3.1 | –3.5 | –3.0 | –2.2 | –1.8 | –1.8 | –1.7 |
| Net debt | 39.7 | 47.0 | 48.2 | 48.5 | 52.6 | 54.8 | 57.0 | 54.8 | 54.3 | 51.8 |
| Gross debt | 48.9 | 56.6 | 56.3 | 58.2 | 62.3 | 64.5 | 66.7 | 64.5 | 64.0 | 61.5 |
| **Italy** | | | | | | | | | | |
| Actual balance | –7.4 | –0.7 | –3.1 | –2.9 | –3.4 | –3.4 | –4.1 | –4.0 | –4.1 | –4.0 |
| Output gap[2] | — | 2.0 | 2.3 | 0.9 | –0.4 | –0.6 | –1.9 | –1.6 | –1.5 | — |
| Structural balance[2,4] | –7.3 | –3.0 | –4.4 | –4.1 | –3.5 | –3.5 | –3.4 | –3.3 | –3.4 | –4.0 |
| Net debt | 105.9 | 103.4 | 103.0 | 100.4 | 100.5 | 102.7 | 105.4 | 106.4 | 107.5 | 111.9 |
| Gross debt | 112.0 | 109.1 | 108.7 | 105.5 | 104.3 | 103.9 | 106.4 | 107.5 | 108.6 | 113.0 |
| **Japan** | | | | | | | | | | |
| Actual balance | –2.8 | –7.7 | –6.4 | –8.2 | –8.1 | –6.3 | –5.6 | –5.2 | –4.9 | –4.0 |
| Excluding social security | –4.9 | –8.2 | –6.5 | –7.9 | –8.2 | –6.6 | –5.3 | –4.8 | –4.6 | –4.1 |
| Output gap[2] | — | –1.0 | –1.6 | –2.9 | –2.7 | –2.1 | –1.2 | –0.2 | 0.1 | — |
| Structural balance[2] | –2.9 | –7.2 | –5.7 | –6.9 | –7.0 | –5.5 | –5.2 | –5.1 | –5.0 | –4.0 |
| Excluding social security | –4.9 | –8.0 | –6.1 | –7.2 | –7.6 | –6.2 | –5.1 | –4.8 | –4.6 | –4.1 |
| Net debt | 27.3 | 60.4 | 66.1 | 72.8 | 77.3 | 82.2 | 86.8 | 89.7 | 92.4 | 98.3 |
| Gross debt | 93.2 | 142.5 | 151.9 | 161.4 | 167.6 | 178.6 | 181.7 | 181.8 | 181.8 | 177.3 |
| **United Kingdom** | | | | | | | | | | |
| Actual balance | –3.7 | 1.7 | 1.0 | –1.6 | –3.3 | –3.2 | –3.3 | –3.2 | –2.8 | –2.0 |
| Output gap[2] | –0.7 | 0.9 | 0.7 | –0.1 | — | 0.7 | –0.2 | –0.2 | — | — |
| Structural balance[2] | –3.3 | 1.5 | 0.5 | –1.9 | –3.3 | –3.4 | –3.2 | –3.1 | –2.8 | –2.0 |
| Net debt | 32.9 | 34.2 | 32.7 | 32.7 | 34.5 | 36.1 | 38.1 | 37.8 | 38.8 | 40.5 |
| Gross debt | 38.3 | 41.6 | 38.4 | 37.9 | 39.3 | 40.8 | 42.7 | 43.1 | 44.2 | 45.6 |
| **Canada** | | | | | | | | | | |
| Actual balance | –4.5 | 2.9 | 0.7 | –0.1 | — | 0.7 | 1.7 | 1.1 | 1.0 | 0.6 |
| Output gap[2] | –0.6 | 1.9 | 0.4 | 0.3 | –0.7 | –0.3 | –0.2 | — | — | — |
| Structural balance[2] | –4.0 | 2.0 | 0.4 | –0.2 | 0.3 | 0.9 | 1.8 | 1.1 | 1.0 | 0.6 |
| Net debt | 80.5 | 65.3 | 60.2 | 58.0 | 51.5 | 46.7 | 41.9 | 38.7 | 35.8 | 27.3 |
| Gross debt | 112.7 | 101.5 | 100.3 | 97.5 | 92.1 | 87.8 | 84.8 | 79.6 | 74.6 | 59.4 |

Note: The methodology and specific assumptions for each country are discussed in Box A1 in the Statistical Appendix.

[1]Debt data refer to end of year. Debt data are not always comparable across countries. For example, the Canadian data include the unfunded component of government employee pension liabilities, which amounted to nearly 18 percent of GDP in 2001.

[2]Percent of potential GDP.

[3]Beginning in 1995, the debt and debt-service obligations of the Treuhandanstalt (and of various other agencies) were taken over by general government. This debt is equivalent to 8 percent of GDP, and the associated debt service, to ½ to 1 percent of GDP.

[4]Excludes one-off receipts from the sale of mobile telephone licenses (the equivalent of 2.5 percent of GDP in 2000 for Germany, 0.1 percent of GDP in 2001 and 2002 for France, and 1.2 percent of GDP in 2000 for Italy). Also excludes one-off receipts from sizable asset transactions, in particular 0.5 percent of GDP for France in 2005.

### Box 1.2. How Emerging Market Countries May Be Affected by External Shocks

While emerging market countries have strengthened their underlying policy fundamentals during recent years, pressures on emerging market asset prices in May–June have provided a reminder that many of these countries remain vulnerable to shifts in global economic and financial conditions. This box explores these downside risks based on some illustrative simulations for a generic Latin American country that is exposed to these vulnerabilities. The simulations are generated from a small open economy model that has now been calibrated for a number of Latin American countries by IMF staff.[1] The results show the potential costs of delaying policy responses to a changing external environment for economies in Latin America and elsewhere where inflation expectations are not yet firmly anchored and where investor risk perceptions can change quickly.

Underlying the simulations, it is assumed that inflation in the United States rises by about ½ percentage point more than previously expected, prompting the Fed to raise the federal funds rate by an additional 75 basis points (see the figure). This increase dampens growth in the United States in the short run. At the same time, it is also assumed that investor appetite for riskier emerging market assets is reduced in the context of more unsettled global financial conditions, implying a rise in the risk premium, particularly for holding paper issued by subinvestment grade countries.

Such an external shock could put immediate downward pressure on the exchange rate of Latin American countries, and raise inflation expectations. Faced with this situation, a forward-looking central bank operating under an inflation-targeting framework would quickly tighten the stance of monetary policy. In the "no delay" simulation an increase in interest rates of around 200 basis points is sufficient to limit the increase in headline year-on-year inflation to 1 percentage point in the short term, and then subsequently return it to its target rate (see the figure). The tightening in monetary conditions, combined with reduced confidence in the context of more uncertain international conditions would result in a more pronounced slowdown in economic activity than in the United States and a larger negative output gap.

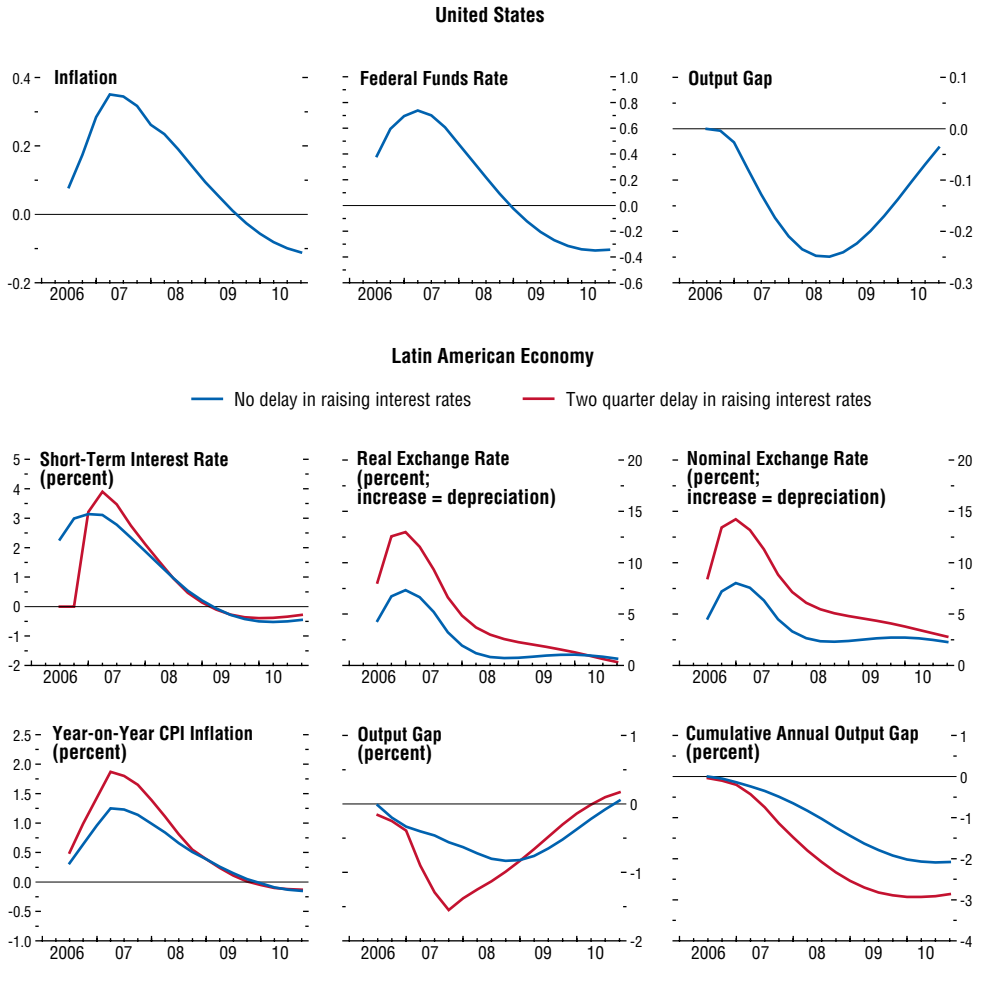
The figure also illustrates the costs of a delayed policy response in the face of such a shock. In this case, there would be a larger upward shift in inflation expectations and a sharper depreciation of the exchange rate, fueling a sustained rise in headline inflation. In the "delayed response" simulation, it is assumed that there is a monetary policy response only after two quarters, and as a result the hike in interest rates would need to be substantially greater to bring inflation back under control. Moreover, the delayed policy response would imply a further deterioration in confidence. Altogether, the economy would undergo a larger and more protracted slowdown in this scenario.

The appropriate timing and strength of monetary policy responses to such external shocks in emerging market countries will obviously vary from country to country, depending, among other things, on the track record of policy management that has been established, the extent of balance sheet and other vulnerabilities, and the scale of external financing needs. In countries where long-term inflation expectations are well-anchored and there is confidence in sustained prudent policy management, pressure on the exchange rate may be limited, and it may not be necessary to hike rates by more than U.S. rates. However, in cases where monetary regimes have a short track record or where balance sheet vulnerabilities and external financing needs remain more of an issue, it may be necessary to raise rates aggressively to prevent a sustained slide in the exchange rate, deteriorating confidence, and significant second-round effects on inflation.

Note: The authors of this box are Ricardo Adrogue and Roberto Garcia-Saltos.

[1]The model includes an inflation equation, a monetary policy reaction function, and a risk-adjusted interest rate arbitrage equation. For a more detailed description, see Berg, Karam, and Laxton (2006).

## Impact of an External Financial Shock on Latin America[1]




Source: IMF staff estimates.
[1]All charts show the trajectory of the relevant variable relative to a baseline forecast.

footing and finding effective ways to contain the seemingly inexorable rising trend of health care costs.

Structural reforms to improve business environments and global competitiveness remain essential to bolster medium-term prospects. In the euro area, faster progress to advance the Lisbon agenda—particularly more open competition in services and more flexible labor markets—and financial sector reforms remain key to raising productivity prospects and improving job opportunities. In Japan, priorities include public sector reforms, steps to enhance labor market flexibility and financial sector efficiency, and reforms to improve productivity performance in the service sector.

## Box 1.3. How Will Global Imbalances Adjust?

The September 2005 and April 2006 issues of the *World Economic Outlook* presented alternative scenarios for the unwinding of global imbalances based on a four-region version of the Global Economy Model (GEM).[1] These illustrative simulations have now been updated with 2006 as the new starting point, using historic data up to 2005. The 2005 data show a further widening in the U.S. current account deficit, while the U.S. net foreign asset position has in fact improved slightly due to favorable valuation effects.

### *"No Policies" Scenario*

The "no policies" scenario assumes that imbalances are unwound through changes in private sector saving behavior and orderly movements in exchange rates (see first figure).[2] The adjustment occurs without substantial policy changes in any of the major economies, but depends critically on the willingness of non-U.S. residents to hold substantial and rising amounts of U.S. assets at relatively low interest rates.

- In the *United States*, the private savings rate rises gradually as households adjust to lower rates of increase in asset prices (and particularly the cooling of the housing market), and U.S. output growth moderates to around 3 percent, in line with potential. Combined with a further 15 percent real effective depreciation of the U.S. dollar, these changes slow the growth of U.S. domestic demand, and produce a steady decline in the current account deficit to about 4 percent of GDP by 2015. U.S. net foreign liabilities rise to 55 percent of GDP by 2015 and would eventually stabilize at around 85 percent of GDP in the long run.[3]
- The main counterpart of the reduction in the U.S. current account deficit would be in *emerging Asia*. In the scenario, productivity growth in emerging Asia is assumed to decline gradually over time to converge toward rates in more advanced economies, while domestic demand is boosted by a progressive decline in the private savings rate from current high levels. This more balanced growth pattern is accompanied by a real effective exchange rate appreciation of about 15 percent.[4] Accordingly, the current account surplus declines from its recent highs of around 5 percent of GDP to about 2 percent of GDP by 2015. Emerging Asia therefore maintains a rising creditor position vis-à-vis the United States, but the trajectory of this position is no longer explosive.
- Adjustments in the *euro area and Japan* and the *rest of the world* are more limited. In the scenario, there are competing influences on the real exchange rate and therefore on the current account: depreciation against emerging Asia dominates in the short run, but is offset in the medium term by appreciation against the U.S. dollar. Productivity growth in the euro area and Japan is assumed to remain sluggish over the medium term, so that output growth remains low. Domestic demand in the rest of the world is boosted by rising absorption, both investment and consumption, in oil exporters.

*In summary*, real exchange rate and current account adjustments in this scenario are sizable but orderly. However, this benign outcome

Note: The authors of this box are Michael Kumhof and Douglas Laxton.

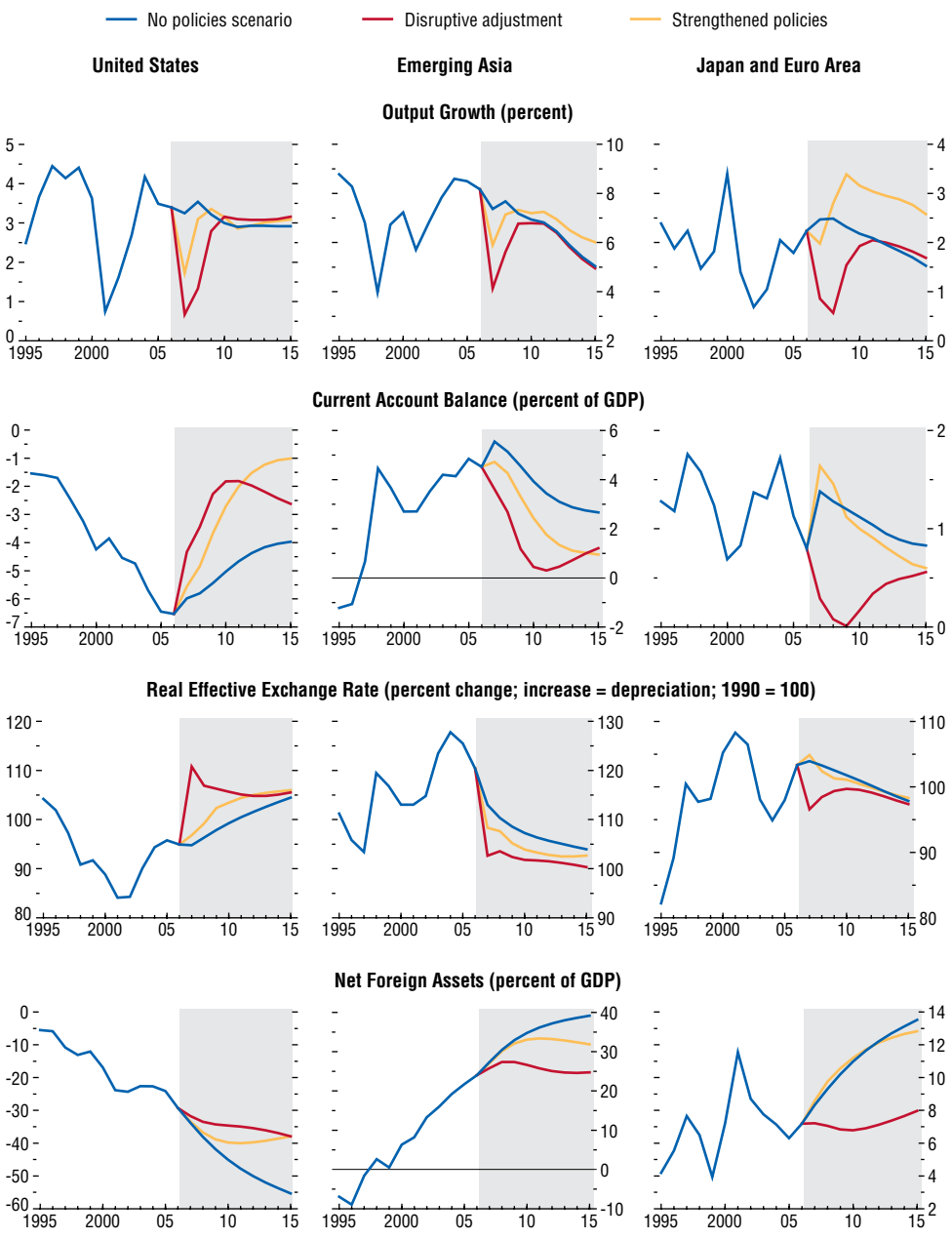
[1]For a description of the model, see Faruqee and others (2005). Parameters have been set for the model in a way that is intended to provide a plausible and consistent modeling of macroeconomic behavior in the main country groups, but it should be emphasized that judgment plays a part in this exercise, and alternative models will give different results. In particular, the quantitative effects of U.S. fiscal consolidation on the current account balance depend on a number of assumptions, with some models producing smaller effects than others. See, for example, Erceg, Guerrieri, and Gust, 2005; and Kumhof, Laxton and Muir, 2005.

[2]This scenario is different from the WEO baseline scenario, in part because real effective exchange rates are allowed to adjust rather than held constant by assumption.

[3]These calculations do not take into account the possible impact of valuation changes on the net foreign asset position.

[4]In the simulation, the rise in the real effective exchange rate comes about as a result of higher domestic inflation, as sterilization of the reserve buildup is assumed to be only partially effective.

## How Will Global Imbalances Adjust?[1]




Source: IMF staff estimates.

[1]See Appendix 1.2, September 2005 *World Economic Outlook* for a detailed discussion of these projections. Since the no policies baseline includes significant short-term real appreciation in Asia through higher inflation, it may overestimate the adjustment in current accounts in the initial period.

**Box 1.3 *(concluded)***

depends critically on two interrelated assumptions. First, foreigners are assumed to be willing to accommodate a further very substantial buildup in U.S. foreign liabilities, from currently less than 30 percent to ultimately around 85 percent of U.S. GDP. This would represent a very high level of external indebtedness, even for a large industrialized country. Second, foreigners would be willing to allocate an increasing share of their asset portfolios to U.S. assets without demanding a large risk premium, even though they may face continued foreign exchange losses. As emphasized in previous issues of the *World Economic Outlook*, these assumptions may not be realistic, and it is relevant to explore alternative scenarios based on more pessimistic assumptions.

### *Disruptive Adjustment Scenario*

The updated disruptive adjustment scenario shows how a much more abrupt and disorderly adjustment could be triggered by a worldwide reduction in appetite for U.S. assets combined with a significantly increased interest rate risk premium. The decline in the demand for U.S. assets is strongest in emerging Asia, where policymakers are assumed to reduce the rate of reserve accumulation and allow more rapid exchange rate appreciation. The resulting abrupt exchange rate realignments are assumed to temporarily reduce global competitive pressures, implying higher wage and price markups.[5] With inflation rising, central banks around the world would be prompted to raise interest rates.

- In the *United States* the current account deficit contracts rapidly to 2 percent of GDP, accompanied by a drop in the currency and a sharp increase in interest rates to combat inflationary pressures. U.S. growth declines to around 1 percent for two years as a sharp drop in domestic demand from higher interest rates more than offsets rising net exports.
- Among the *remaining three regions*, the sharpest real exchange rate appreciation occurs in emerging Asia, almost eliminating the region's current account surplus by 2010. Growth also declines, although remaining over 4 percent. The euro area and Japan and the remaining countries experience similar effects, but on a smaller scale.
- There are clear risks of even worse outcomes than shown in the disruptive adjustment scenario. A major concern is that a disorderly exchange rate adjustment and global recession would risk a *severe disruption in financial markets*, hurting productive capacity, depressing access to credit and aggregate demand, and leading to asset price deflation.[6] Another concern is that a downturn in activity could trigger a *wave of protectionism*, causing a substantial reduction in living standards across all countries.[7]

### *The Strengthened Policies Scenario*

The strengthened policies scenario is based on a menu of policies implemented across different regions of the world economy that would significantly reduce the risk of a disorderly adjustment (see second figure).[8]

- *Greater exchange rate flexibility in emerging Asia.* This is assumed to be accompanied by gradually reduced foreign exchange purchases by monetary authorities and by an improvement in productivity as an increasing share of wealth is invested in productive physical capital inside the region.

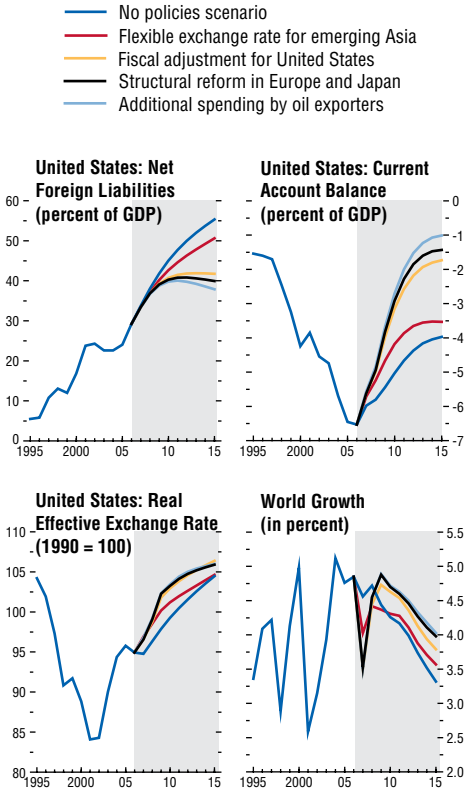
[5]The increase in markups could result either from an unleashing of inflationary pressures that have been contained by low prices of traded goods produced in emerging Asia or from a temporary increase in protectionist actions.

[6]Channels for such disruption would include exchange rate–related valuation losses on corporate and especially bank balance sheets, and the effect of increased interest rate volatility on financial intermediaries through its effects on the solvency of corporate borrowers and on exposures from international arbitrage transactions (the carry trade).

[7]The worldwide output losses caused by such policies could be very high. For a quantitative analysis, see Faruqee and others (forthcoming).

[8]Policy actions other than the ones mentioned here may be feasible, including measures to boost private investment in some parts of Asia, and measures to encourage private saving in the United States.

### Effects of Policy Measures on Real Exchange Rates, World Growth, and U.S. Net Foreign Liabilities




Source: IMF staff estimates.

- *Fiscal consolidation in the United States.* The initial U.S. general government deficit of around 4 percent of GDP is assumed to be eliminated by 2012 by a combination of spending restraint and tax increases. This reinforces the underlying tendency for private savings to rise embedded in the "no policies" scenario, allowing both a reduction in foreign liabilities and a greater increase in the domestic physical capital stock. These shifts lower world real interest rates by 25 basis points after 10 years, contributing to raise growth worldwide.
- *Structural reforms in the euro area and Japan.* More ambitious product and labor market reforms are assumed to lower markups in Europe and Japan over time, eliminating about two-thirds of the gap with U.S. levels over a 10-year period. This shift induces households and firms in this region to invest more in their economies, raising productivity growth.
- *Additional spending by oil exporters.* The large wealth transfer from higher oil prices is assumed to be used by these economies to increase investment and productivity (at a greater pace than built into the baseline scenario).

The strengthened policies scenario illustrates the clear payoffs to joint action both in terms of reducing imbalances and improving growth prospects on a sustainable basis (see first figure for comparisons with the no policies and disruptive adjustment scenarios). The negative effect of policy action on short-run growth is limited—substantially less severe than under the disruptive adjustment scenario—while there would be beneficial effects for medium- and long-run growth everywhere. This is due not only to the direct effect of domestic policies, but also to the spillover effects from successful policies implemented elsewhere. Growth becomes better balanced across regions, with the euro area and Japan catching up and growth in emerging Asia settling at a higher rate than in the alternative scenarios. Growth also becomes better balanced within each economy, with lower but more sustainable consumption growth in the United States and higher consumption growth in the euro area, Japan and emerging Asia.

Under the strengthened policies scenario, the U.S. current account deficit declines to around 1 percent of GDP by 2015. As a result, the buildup in U.S. net foreign liabilities is contained at below 40 percent rather than 85 percent of U.S. GDP, implying a much reduced risk that changes in the preferences of foreign creditors of the United States could lead to an abrupt adjustment that would have a very negative growth impact in all regions.

In emerging market and developing countries too, more needs to be done to move forward market-oriented reforms while also taking steps to ensure that the opportunities and the benefits of growth are broadly shared. Chapter 3 of this report looks at the Asian growth experience in some detail. It concludes that maintaining the successful growth record in Asia and further reducing poverty and income disparities will increasingly depend on reforms that enhance competition and flexibility, while at the same time improving access, especially for low-income groups, to education, health care, and a reasonable social safety net. These lessons are also very relevant outside Asia. Corporate governance and financial sector reforms to increase market discipline would help to ensure an efficient allocation of investment in China, while stronger social safety nets could help support consumption growth. Tighter financial regulation in emerging Europe would reduce vulnerabilities related to rapid credit growth. Labor market reforms and fiscal reforms to improve the targeting of public spending on social and investment priorities would substantially improve prospects for low-income groups across a range of countries.

High and volatile prices in world energy markets remain a major concern that will require sustained efforts from all sides to address. Plans for increased investment by major oil producers in the Middle East are highly welcome. However, recent unilateral efforts to ensure national energy security through self-sufficiency—including keeping foreign companies out of national markets, promotion of national champions, and rushing to secure oil fields abroad at any cost—is a path that could increase global inefficiencies without reducing the risks to the international community. Rather than such "energy protectionism," what is needed is to make sure that markets function well, providing appropriate and predictable incentives to producers to invest (particularly in riskier and higher cost sources of energy), and to ensure adequate spare capacity. Moreover, conservation efforts should be encouraged by ensuring that consumers face prices that reflect the full social costs of energy use. Further efforts to improve energy statistics, including more consistent and reliable measures of petroleum reserves, would encourage more rational and far-sighted decision-making.

Continuing at the global level, multilateral trade liberalization remains essential for enhancing prospects for sustained global growth. The present deadlock in the Doha Round negotiations is deeply disappointing, and raises concerns about a resurgence of protectionism. Renewed efforts are needed to reinvigorate the process of multilateral trade liberalization, guard against protectionist pressures, and avoid over-reliance on bilateral trade agreements as a means to advance trade liberalization. Trade liberalization on a nondiscriminatory (i.e., most favored nation, or MFN) basis remains the best way to open up global growth opportunities.

Continued attention is also needed to maintain the buildup in aid flows to the poorest countries, to supplement their own efforts to reach the Millennium Development Goals. Such efforts would become doubly important if the Doha Round cannot be resuscitated or if there is a softening of the buoyant commodity prices that have helped to underpin robust growth in sub-Saharan Africa.

As emphasized in previous issues of the *World Economic Outlook*, policy actions across the major players in the world economy would help to ensure a smooth resolution of the problem of global imbalances. Box 1.3 discusses how this resolution could be achieved through a combination of steps to boost national saving in the United States, including through a more ambitious commitment to fiscal consolidation over the medium term; greater progress on structural reforms in Europe and Japan; reforms to boost domestic demand in emerging Asia (consumption in China and investment elsewhere), together with greater exchange rate flexibility; and increased expenditures by oil-exporting countries in high return areas, consistent with absorptive capacity constraints, especially in the Middle East, where the large buildup of

investment projects already in train is welcome. Each of these policy goals is in the best interest of the countries concerned, but progress in advancing toward these goals has been in some cases slower than desirable, hampered in part by the difficulty of developing national political consensus on policy changes that will have distributional consequences. A joint, multilateral approach may help to advance implementation by stressing cross-border linkages and spillovers; providing additional reassurance that possible risks associated with individual actions would be alleviated by policy initiatives elsewhere; and generating a sense of common commitment by the world community that would provide the best hope to ensure continued rapid global growth and prosperity. The multilateral consultation now being undertaken by the International Monetary Fund with China, the euro area, Japan, Saudi Arabia, and the United States aims to help toward developing such a joint approach.

## Appendix 1.1. Recent Developments in Commodity Markets

*The main author of this appendix is Valerie Mercer-Blackman, with contributions from To-Nhu Dao and Nese Erbil.*

In the first seven months of 2006, the IMF commodities and energy price index increased by over 15 percent in dollar terms, led by surging base metals prices (in particular copper, zinc, and nickel). The increase was underpinned by higher demand for commodities, driven by robust global economic growth. Energy prices continued to rise, albeit at a more moderate pace, with crude oil prices posting new highs in early August in the context of heightened tensions in the Middle East.

### Crude Oil and Other Petroleum Products

Oil price increases over the past eight months have reflected buoyant global activity, which has tempered the response of oil demand to higher prices, and supply concerns related to geopolitical uncertainties. Looking forward, with spare capacity expected to remain tight, futures markets suggest that prices for crude oil will remain high for the remainder of 2006 and 2007 (Figure 1.15).

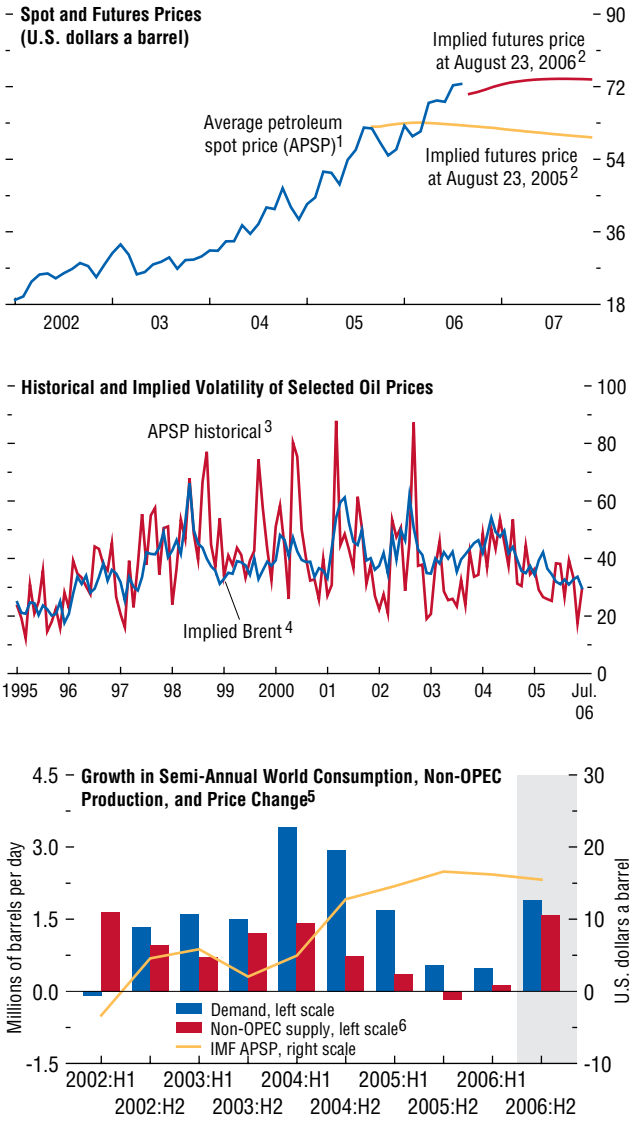
#### *Price Developments*

During the first eight months of 2006, the average petroleum spot price rose by 16 percent.[6] The oil price rose sharply above its pre-Katrina peak in early May and again in early August to reach a new record high of $76, amid concerns related to the intensification of the standoff over the Islamic Republic of Iran's nuclear program, the outbreak of fighting in Lebanon and Israel, and the closing of a large Alaskan oil field by British Petroleum. Continued violence in the Nigerian oil-producing region and security threats to Iraqi oil infrastructure have also contributed to market fears about potential supply shortages (the Islamic Republic of Iran, Iraq, and Nigeria together export almost four times as much as the current global spare capacity). Announcements by some governments of policies aimed at greater control of their oil and gas fields (as in Venezuela, Bolivia, and Russia) have also contributed to higher uncertainty and cautious investment behavior (see below). However, despite these uncertainties, price volatility does not appear to have increased (see Figure 1.15).

Gasoline prices in OECD member countries and in Asia have increased by 25–30 percent so far in 2006, and in the United States in August were only 13 percent below their record level following hurricane Katrina. Temporary upward pressure on margins came in part because many U.S. refineries were still shut down or operating at reduced rates due to last year's hurricane damage, while others had deferred planned

[6]The IMF average petroleum spot price (APSP) is an equally weighted average of the West Texas Intermediate, Brent, and Dubai crude oil prices. Unless otherwise noted, all subsequent references to the oil price are to the APSP.

### Figure 1.15. Crude Oil Spot and Futures Prices, Price Volatility, and Consumption-Production Changes




Sources: Bloomberg Financial Markets, LP; International Energy Agency; and IMF staff calculations.

[1]Average unweighted petroleum spot price of West Texas Intermediate, U.K. Brent, and Dubai Fateh crude.

[2]Five-day weighted average of NYMEX Light Sweet Crude, IPE Dated Brent, and implied Dubai Fateh.

[3]The standard deviation of the level of prices over 30-day rolling periods divided by the mean over the same period.

[4]The weighted average of the volatilities of the front month's 3 options closest to the at-the-money strike.

[5]2006:H2 supply and demand projections are from the International Energy Agency.

[6]Includes non-crude production.

routine maintenance to the spring; and in part because of bottlenecks created by the transition to reformulated gasoline blended with ethanol. Natural gas prices in the United States have continued to decline, and at end-August were below European prices.

### *Oil Consumption*

Global oil consumption increased by 0.5 million barrels per day (mbd) (0.6 percent) in the first half of 2006 relative to the same period in 2005 (Table 1.4 and Figure 1.15). Consumption in the United States fell somewhat over this period (in part owing to one-off factors), but still was higher than expected, with gasoline consumption recovering strongly in the second quarter of 2006. Oil consumption growth remained high in China (the second largest consumer of oil) and in the Middle East, while it fell slightly in Europe and Japan. Evidence suggests that in countries such as Indonesia, Malaysia, and Jordan, efforts to increase the pass-through of global oil prices into domestic prices, while politically difficult, have helped dampen demand (Table 1.5). Retail gasoline and diesel prices were also recently raised almost 10 percent in China and India, but in these countries the effect on household consumption in the short term is expected to be limited.[7]

Overall, it appears that price increases since 2003 have had some dampening effect on demand, but the strength of GDP growth in many countries—especially China and the United States—has prevented a fall in overall consumption. This is in contrast with the significant weakening in demand observed following the oil price hikes of 1979–80.[8]

[7]In China, refiners will now have a marginally higher incentive to supply the domestic market than before, so the easing of shortages could lead to higher consumption, which had been suppressed by rationing; while in India, prices of kerosene—a heavily consumed domestic fuel—were not changed.

[8]Most studies show that the short-term price elasticity of demand for oil is very low (on the order of 0.01 to 0.03 percent within a year), and the income effect tends to dominate.

**Table 1.4. Global Oil Demand by Region**
*(Millions of barrels per day)*

| | Demand | | | Change | |
|---|---|---|---|---|---|
| | 2006:H1 | 2005:H1 | 2005:H2 | 2006:H1/2005:H1 | 2006:H1/2005:H1 |
| | *(millions of barrels a day)* | | | *(millions of barrels a day)* | *(percent)* |
| North America | 25.15 | 25.45 | 25.45 | –0.30 | –1.2 |
| Europe | 16.05 | 16.10 | 16.25 | –0.05 | –0.3 |
| OECD Pacific | 8.55 | 8.75 | 8.45 | –0.20 | –2.3 |
| China | 6.95 | 6.55 | 6.75 | 0.40 | 6.1 |
| India | 2.70 | 2.65 | 2.55 | 0.05 | 1.9 |
| Other Asia | 6.25 | 6.25 | 6.15 | 0.00 | 0.0 |
| Former Soviet Union | 3.80 | 3.75 | 3.85 | 0.05 | 1.3 |
| Middle East | 6.40 | 6.05 | 6.20 | 0.35 | 5.8 |
| Africa | 3.00 | 2.90 | 2.85 | 0.10 | 3.4 |
| Latin America | 5.15 | 5.05 | 5.15 | 0.10 | 2.0 |
| World | 84.00 | 83.50 | 83.65 | 0.50 | 0.6 |

Source: International Energy Agency, *Oil Market Report*, August 2006.

### *Oil Production and Inventories*

Non-OPEC production in the first half of 2006 rose by 0.14 mbd compared to the same period last year, somewhat lower than expected at the beginning of this year (Figure 1.15). Production increases came from Russia (where production is recovering from a low in 2005), Azerbaijan, Brazil, and non-OPEC Africa. In the OECD region, a recovery in U.S. production following the hurricanes was somewhat offset by production declines in Europe, particularly the North Sea. OPEC production fell marginally during the first half of 2006, with output declines in Saudi Arabia and to a lesser extent the Islamic Republic of Iran. Lower-than-planned OPEC production mostly reflects the situation in Nigeria, where about 0.7 mbd of its 2.5 mbd production has been shut down since the beginning of the year due to violence in the Niger delta. Overall, supplies remain tight: most analysts currently estimate readily available OPEC spare capacity at between 1–2 mbd, and much of it is of the heavy sour crude type, which is difficult to refine (see Figure 1.16).[9]

[9]Readily available capacity excludes capacity from Indonesia, the Islamic Republic of Iran, Nigeria, and Venezuela.

OECD crude oil inventory levels remain at historically high levels, likely reflecting strong precautionary demand (accommodated, in part, by OPEC's willingness to make additional supplies available) amid perceptions that prices will remain high and market tightness will persist. OECD commercial crude and product stocks increased steadily to 2.4 billion barrels in June 2006, equivalent to 54 days of forward cover (Figure 1.16).

### *Short-Term Prospects and Risks*

Despite signs of slowing demand in some regions, the crude oil market is expected to remain tight for the foreseeable future. The International Energy Agency (IEA) has lowered projections for global consumption growth in 2006 from 1.8 mbd early in the year to 1.2 mbd, as increased pass-through in many countries and sustained high prices are expected to impact demand further. However, many analysts are projecting somewhat higher consumption growth above 1.3 mbd, citing continued strength in China and the United States. Projections of non-OPEC supply growth in 2006 range widely from 0.6 to 1.1 mbd (the latter by the IEA), but may prove overly optimistic as they assume a substantial recovery in the second half of 2006. In turn, OPEC estimates its capacity to increase by 1 mbd by end-2006 relative to end-2005.

### Table 1.5. Selected Domestic Fuel Price Changes, January 2005–June 2006

| Country and Time of Last Change | Price and Policy Change | Nature of Policy |
|---|---|---|
| **Fuel exporters** | | |
| Iran, Islamic Republic of[1] | Fuel prices were frozen in 2003 at subsidized levels. | Rationing of refined imports under consideration. Cost of subsidies is almost 16 percent of GDP. |
| Iraq (June 2006) | Fuel prices increased between 300 and 1,400 percent since September 2005, depending on product. | Prices are gradually being brought into line with regional average. |
| Nigeria (August 2005) | 25 percent (gasoline). | |
| Saudi Arabia (April 2006)[1] | –30 percent (gasoline and diesel). | Price reduction aimed at distributing part of the increased oil wealth to the population. |
| United Kingdom (through 2005–06) | Excise taxes on petroleum products frozen. | |
| Vietnam (early 2006) | Removed import duties on all petroleum products as of April 2006. | Domestic prices were raised three times in 2005 (in March, July, and August), lowered once (in November), and increased again in April 2006. |
| **Fuel importers** | | |
| China (May 2006)[1] | 9.6 percent (gasoline).<br>11.1 percent (diesel). | National Development and Reform Commission (NDRC) ordered to ensure that domestic supplies do not suffer and subsidies are targeted to poor. |
| India (June 2006) | 9.2 percent (gasoline).<br>6.6 percent (diesel).<br>Cumulative price increases since end-2004 are 26 percent for gasoline, and 24 percent for diesel. | Gasoline and diesel prices were also increased in June and September 2005, however, there has been no change in kerosene prices. |
| Indonesia (March 2006) | 29 percent (gasoline and diesel).<br>This followed a price increase in October 2005 of 88 percent for gasoline, 105 percent for diesel, and 186 percent for kerosene. | Dissemination and cash transfer program to poor families implemented simultaneously. Moreover, since October 2005 industry prices adjust every month to reflect market prices. |
| Jordan (April 2006) | 30 percent (diesel and kerosene).<br>Prices were also raised by 15 percent in September 2005 and by 25 percent in July 2005. | Gradual reduction of subsidies accompanied by measures to protect vulnerable groups. |
| Malaysia (February 2006) | 23 percent (gasoline, kerosene and LPG). | Follows price increases in February, March, and July 2005. |
| Thailand (July 2005) | Ended diesel subsidy. | |

Sources: International Energy Agency; and IMF staff.
[1]Domestic gasoline prices remain significantly below international prices.

Therefore, even under optimistic scenarios for demand and supply, global spare capacity is likely to remain low. Refining capacity is also expected to remain tight in 2006–07, especially in the United States.

Against this background, futures markets suggest that oil prices would remain in the $70–75 range in 2006–07, with short-term fluctuations driven by political developments. A sharp drop in prices (say, to $50 a barrel) would require either a significant fall in demand induced by slower economic growth or (less likely), an easing of ongoing geopolitical tensions.[10] However, adverse developments on the supply side, such as further production outages in Nigeria and Iraq, or potential supply problems in the Islamic Republic of Iran, Venezuela, and the Gulf of Mexico (a strong hurricane season is expected), could push prices up further. Oil options prices suggest that in August 2006 markets put a

[10]OPEC has argued that the market fundamentals support a price no lower than $50. Should oil prices drop close to this level, OPEC would likely reduce quotas.

10 percent chance on Brent oil exceeding $90 a barrel in December 2006.

### *Medium-Term Prospects: How Will Supply Respond?*

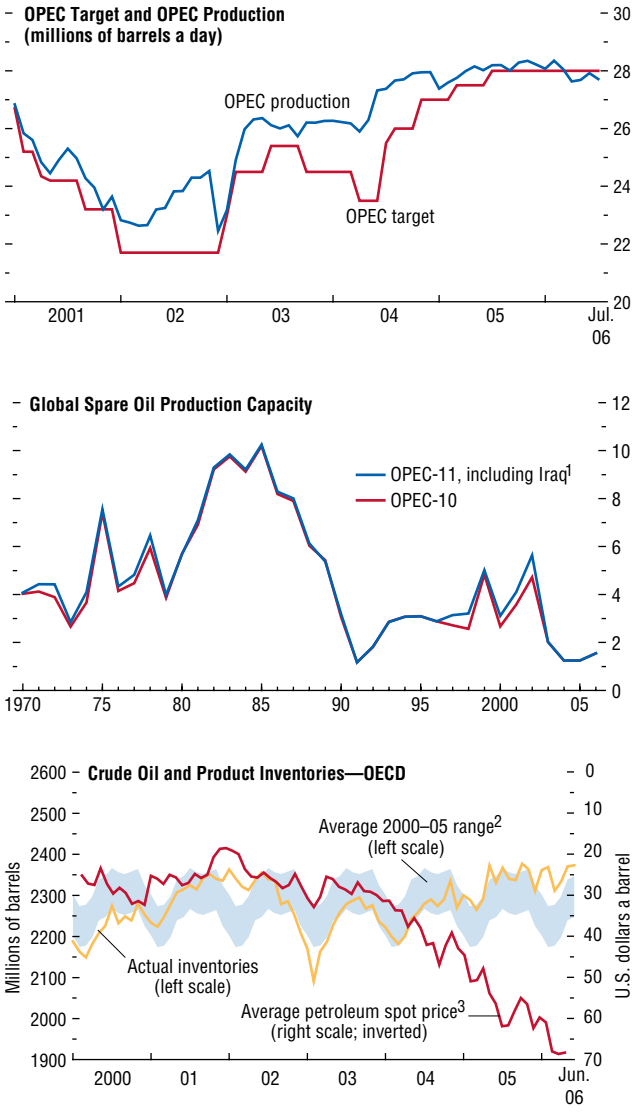
Even if the response of demand to higher prices strengthens, rebalancing the oil markets will depend fundamentally on supply adjustments in an industry with very long investment cycles (5–10 years). The key in the years ahead, therefore, is whether sufficient investment will take place. However, both international oil companies (IOCs) and national oil companies (NOCs) appear to be following a cautious approach toward investment. Medium-term forecasts by the IEA and others suggest that current investment rates could be as much as 20 percent below what would be necessary to satisfy future global demand under the assumption that prices weaken somewhat from current high levels. This section discusses possible reasons for this cautious investment behavior and how it could be related to the changing supply structure of the global oil market. Data deficiencies, however, in particular in the case of NOCs, do not permit a conclusive statement on investment behavior.

#### Investment by International Oil Companies (IOCs)

It is often argued that IOCs are not doing enough to increase investment—and thus capacity—to mitigate upward pressures on oil prices. According to data on companies listed on stock exchanges in the Group of Seven (G-7) countries, oil and gas companies have posted record profits in the past two years—well above the rest of the nonfinancial corporate sector—largely owing to the increase in energy prices. In the United States, the oil and gas corporate sector has almost doubled in valuation since mid-2000, well above the increase in the total S&P index, while oil service companies, which supply equipment and related services, have done even better (Figure 1.17). However, notwithstanding a significant increase in real investment since 2000, investment levels are still below the levels in the early 1990s, when spare

**Figure 1.16. OPEC Production, OPEC Spare Capacity, and OECD Inventories**

*(Millions of barrels a day unless otherwise stated)*



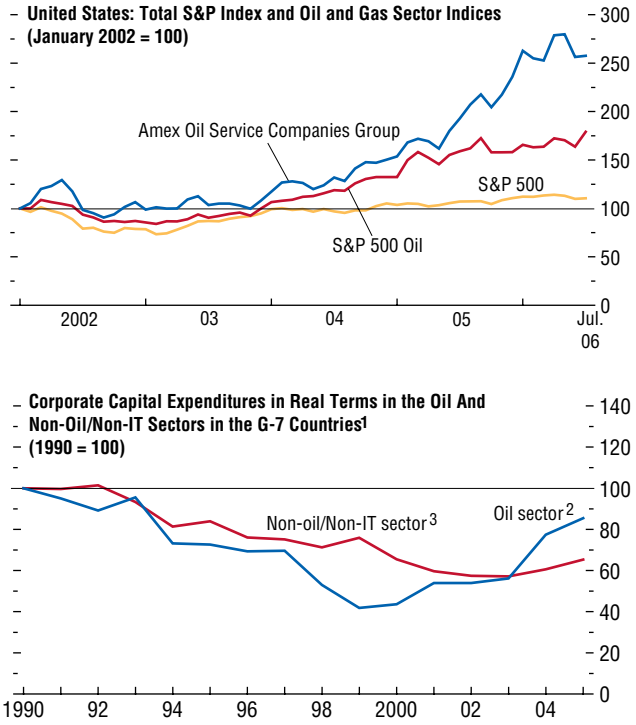

Sources: Bloomberg Financial, LP; International Energy Agency; U.S. Department of Energy; and IMF staff calculations.

[1]OPEC-11 spare capacity refers to production capacity that can be brought online within 30 days and sustained for 90 days.

[2]Average of each calendar month during 2000–05, with a 40 percent confidence interval based on past deviations.

[3]Average unweighted petroleum spot price of West Texas Intermediate, U.K. Brent, and Dubai Fateh crude.

## Figure 1.17. Stock Market Valuations and Real Investment in Oil and Non-Oil Sectors




Sources: Bloomberg Financial Markets, LP; Worldscope; U.S. Bureau of Labor Statistics; and IMF staff calculations.

[1]2005 estimates were derived from company listings of a few representative companies in each sector (for oil and gas, the nine major international oil companies); therefore, they are not directly comparable with the 2004 figures.

[2]Adjusted by the average of oil support and oil equipment producer price index (PPI), 1990 = 100.

[3]PPI adjusted, 1990 = 100.

capacity was much higher, and a large share of profits has gone toward paying higher dividends and acquiring new assets.[11]

A number of specific factors have impeded higher investment by IOCs. First, investment opportunities are constrained by limited access to reserves in some oil-rich countries, while changes in regulatory regimes and risks of nationalization in some countries have made returns on new investments more uncertain. Second, in OECD countries and in others where IOCs dominate production, existing conventional fields are going into decline, and it has become more difficult and costly to extend their production life. Third, following the extensive downsizings of the 1990s, the IOCs are constrained by the availability of qualified staff and are facing higher short-term investment costs.[12] As a result, an increasing share of earnings has been used to acquire other oil companies as a less risky alternative to greenfield investments. The median share of oil and gas companies' cash earnings spent on domestic and foreign asset acquisitions increased from 13 percent in the 1990s to 20 percent during 2001–04. Such acquisitions imply an increase in capital expenditures and production capacity for an individual IOC, but not for the global economy as a whole.

Faced by limited opportunities in conventional fields, the IOCs have become active in developing alternative production sources (such as fields in new areas or new technologies). In these areas too, the IOCs face competition from NOCs—including from oil-importing countries—which in recent years have become just as active as IOCs in acquiring foreign assets, as well as in forging

[11]Investment data from international oil companies listed in the G-7 countries' exchanges is derived from balance sheet data from the *Thomson Worldscope* database. Data are not always comparable across companies owing to differences in accounting standards and in the number of companies reporting, which varies over time.

[12]This is also an issue in many NOCs (although less so for very large oil producers where expertise has been maintained). Moreover, there are cost pressures on equipment and other input since their suppliers are working at full capacity.

downstream and upstream ventures abroad, creating new challenges and opportunities for IOCs (see Box 1.4).

### Investment by National Oil Companies (NOCs)

NOCs in a number of major oil producers—particularly where financial constraints are less binding or there is flexibility in attracting private capital—have ratcheted up plans for investment in the past year. Large companies—such as Saudi Arabia's Aramco, UAE's ADNOC, and Kuwait's KPC, which can self-finance projects and have maintained their human and productive capital base during the lean years of the 1990s—have developed ambitious capacity expansion plans at all levels of the production chain.[13] Some NOCs in more fiscally strapped countries have recently sought new ways of accessing private sector financing and know-how, while at the same time abiding by the constitutionally mandated prohibition of foreign ownership. NOCs such as Mexico's Pemex, Algeria's Sonatrach, and the Islamic Republic of Iran's INOC set up "build-operate-transfer" projects with IOCs, and have seen investment in these projects take off very rapidly, although overall investment has lagged.

Real investment of most other NOCs does not appear to have recovered from the decline in the 1990s despite a slight pickup since 2000, although data are limited.[14] Investment has been constrained by numerous explicit and implicit restrictions imposed by their own governments. NOCs in many low-income, but oil-rich, countries are often short of financial resources, because cash flow is siphoned off to the budget—for example, through high implicit fuel subsidies (when the domestic fuel price for consumers is kept artificially low) and in some cases as a result of corruption. Even where the intentions of the government are benign, competing objectives can lead to politically difficult trade-offs. For example, if the government needs to undertake fiscal adjustment, it may do so at the cost of reducing resources available to the NOC. Dada (2005) shows that budgetary allocations to NOCs are a significant determinant of NOCs' investment the following year. Consequently, the lack of investment in oil production infrastructure over a number of years can imply that NOCs are not in a position to take full advantage of potential gains from current price levels.

[13]Aramco has already started implementing plans to invest more than $50 billion over three to six years to expand production by almost 20 percent and refining by 50 percent; ADNOC plans to increase production by 30 percent and KPC by 60 percent by 2020.

[14]Based on information on capital and exploratory expenditures from the *Oil and Gas Journal* for 19 NOCs to 2004. The NOCs that publish investment data produced about 53 percent of total NOC oil output. There is no investment information on four major Middle Eastern NOCs—Aramco, ADNOC, INOC and NIOC (Iraq)—and limited data on other NOCs.

**Table 1.6. Nonenergy Commodity Prices**
*(Percent change between January–July 2006)*

| | U.S. Dollar Terms | Contribution[1] | Special Drawing Right (SDR) Terms |
|---|---|---|---|
| Food | 10.7 | 35.9 | 8.4 |
| Beverages | –2.2 | 3.6 | –4.2 |
| Agricultural raw materials | 4.0 | 9.2 | 1.8 |
| Metals | 32.0 | 51.3 | 29.2 |
| Overall nonenergy | 18.5 | 100.0 | 16.1 |

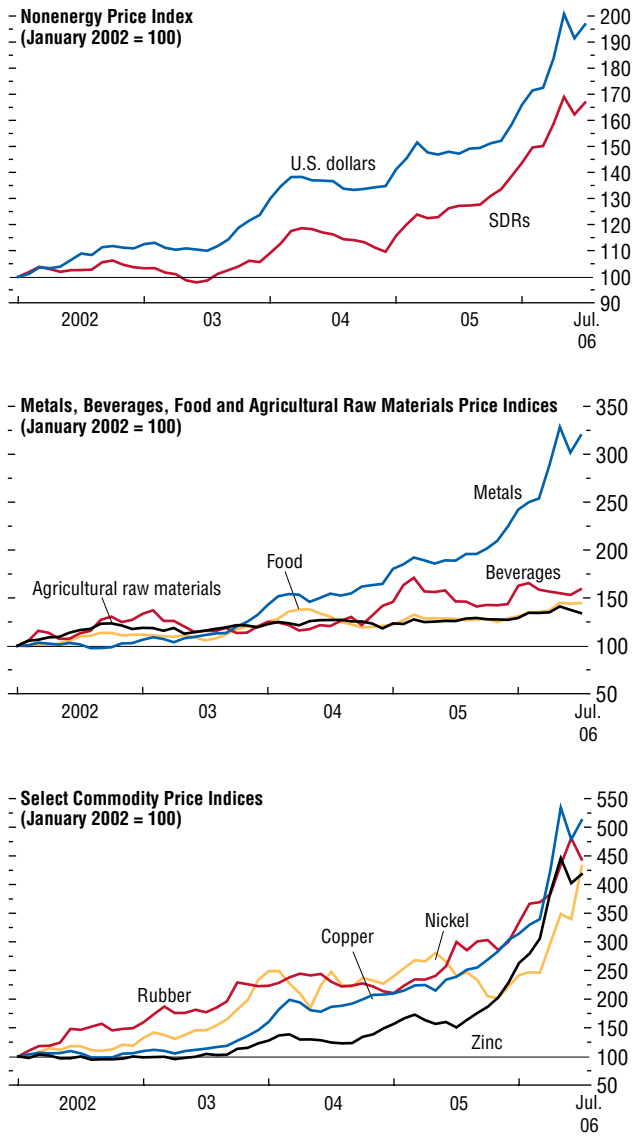
Sources: IMF Primary Commodity Price Database; and IMF staff estimates.

[1]Contributions to change in overall nonenergy price index in U.S. dollar terms, in percent. Contributions to change in SDR terms are similar.

## Nonenergy Commodities

The IMF nonfuel commodity index rose by 19 percent in dollar terms between January and July 2006, reaching its highest level in real terms since 1990 (Table 1.6). Metals prices increased by 32 percent between January and July 2006 mostly on the strength of copper, zinc, and nickel: prices of these base metals spiked by 60–70 percent over a six-week period through early May, then dropped by 25 percent by end-June. Metal prices are expected to fall further in the second half of 2006, but are still projected to show a 45 percent increase for 2006 relative to 2005.

## Figure 1.18. Nonenergy Commodities




Source: IMF staff calculations.

While demand remains strong, supply concerns have also contributed to high and volatile prices. Many producers, particularly of copper, zinc, and nickel, have been affected by deteriorating ore quality, production disruptions caused by outages and earth slides, and labor disputes. Moreover, global inventories remain at historically low levels, while the introduction of new capacity has been delayed because of high energy and equipment costs and labor shortages. A surge in investor interest in commodities has come hand in hand with the tightening of market conditions, but empirical analysis by IMF staff suggests that speculative activity—measured as the number of net long noncommercial positions—has followed rather than been the cause of the high price levels (see Chapter 5, Box 5.1). Looking forward, despite an expected capacity increase in metals this year, the tight market situation will probably continue into late 2007–early 2008, until sufficient new capacity comes into operation.

The food price index rose 11 percent between January–July 2006 (Figure 1.18). Unfavorable weather conditions early this year reduced grain production significantly, while demand continued at record highs, drawing down already low global stocks. Seafood prices rose sharply during this period, largely on robust demand in European countries. Beverage prices fell by 2 percent in the first seven months, due mostly to increases in coffee supplies. Looking ahead, for 2006 as a whole, food prices are expected to rise by 8 percent, while beverage prices will increase by less than 2 percent.

The agricultural raw material price index rose 4 percent between January and July 2006, led by natural rubber and hardwood prices. Natural rubber shortages in 2005 have been extended into 2006 and pushed prices up by 33 percent, in part because continued high oil prices have boosted prices of synthetic rubber. Hardwood prices continued their gain from 2005, mainly as a result of strong Chinese demand. Raw materials prices are expected to ease in the second half of 2006, but still increase 5 percent overall in 2006.

## Semiconductors

In the first half of 2006, semiconductor demand was stronger than anticipated, mainly in the consumer electronic product sectors (Figure 1.19). Total worldwide sales revenues grew by 9 percent year-on-year, particularly in the Americas and the Asia-Pacific regions, on surging volume growth; the number of units sold rose 8 percent, while prices rose slightly. The Semiconductor Industry Association (SIA) has revised up its forecast for growth in worldwide semiconductors sales, to 10 percent in 2006, and expects sales growth to continue at around this pace in 2007 before slowing down in early 2008.

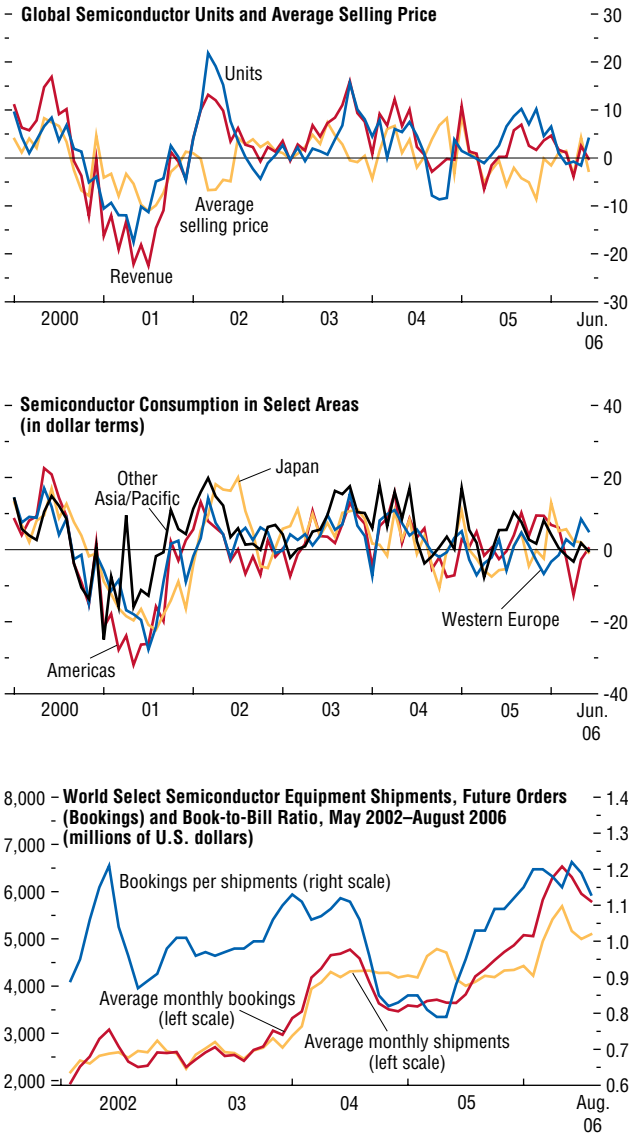
The fastest-growing global major end-market segment is cellular telephones, especially third-generation (3G) phones. This segment is now second only to personal computers in terms of total chip consumption. Other major drivers of demand for semiconductors include digital cameras, digital television, and MP3 players, with increasing demand for products using flash memory.[15] Indeed, the explosive growth in flash memory demand has drained traditional capital from the DRAM market, which has consequently had limited capacity expansion.

Continuing high demand and tight capacity utilization rates have led to surging investment in the semiconductor industry. Capital expenditure, in particular in the Asia-Pacific, is expected to increase 16 percent worldwide in 2006. Despite adequate inventory levels, new construction and upgrades of foundries continue, with more than one-third of all new capacity planned in 2007 for flash memory production. Concerns have thus been raised by industry analysts about too much capacity coming online at the end of 2006, in particular if a slowdown in major consumer markets impacts equipment spending.

[15]Flash memory is a nonvolatile memory device that can be electrically erased and programmed anew and retains its data when power is off. It is durable and operates at low voltages.

### Figure 1.19. Semiconductor Market

*(Seasonally adjusted; quarterly percent change of three-month moving average unless otherwise noted)*




Sources: Semiconductor Industry Association; Semiconductor Equipment and Materials International (SEMI); VLSI Research; and IMF staff calculations.

## Box 1.4. International and National Oil Companies in a Changing Oil Sector Environment

The increasing importance of national oil companies (NOCs) has brought new challenges and potential opportunities for international oil companies (IOCs). This box discusses the changing relationship between IOCs and NOCs, and suggests that improved partnership between the two—taking better advantage of each other's strengths and needs—would strengthen prospects for increasing investment in the oil sector as a whole.

The structure of NOCs and their governance and partnership arrangements with IOCs vary considerably. Oil production growth in 2000–05 has generally been higher in countries where IOCs' presence is greater.[1] The bulk of world reserves are in countries with majority NOC control. However, the regulatory quality of the government is lower in this group of countries (this remains true if only developing countries are compared; see table).

The global oil industry continues to have an oligopolistic structure, but the importance of NOCs in the control of production has risen dramatically. Twenty national and international oil companies own almost 80 percent of the world's proven reserves. Significantly, the top four—which own 60 percent of the world's reserves—are NOCs from Saudi Arabia, the Islamic Republic of Iran, Iraq, and Kuwait with full ownership and control of their oil wells. Moreover, some NOCs are quickly expanding outside their borders. Companies like PetroChina, Petronas, and Petrobras, formerly exclusively involved in domestic production, have won lucrative international contracts. NOCs from oil-importing countries such as China, Japan, and India have been very active in forging foreign upstream ventures and acquiring foreign assets, a behavior akin to traditional major IOCs. The difference is that these strategies are often driven by their countries' energy security policies. The distinction between types of companies is also becoming blurred. It is not uncommon to have a project run as a joint venture where the partners are a subsidiary of the host NOC, an IOC, and a foreign NOC.

Partnerships among different types of companies should, in theory, allow each side to contribute its strengths, but in practice differences between major IOCs and large NOCs make such unions rare. Part of the explanation may have to do with fundamentally different and clashing objectives between the two, as suggested in Marcel (2006). IOCs want access to equity, acceptable rates of return, and incentives for enhanced recovery. NOCs, for their part, want access to the managerial, technical, and financial expertise of IOCs without having to give up ownership and control of their

[1]Most NOCs are fully publicly owned, although some NOCs (such as Brazil's Petrobras, China's Sinopec, and Oman's PDO) have some private ownership. When oil companies forge joint ventures, typically a new company or subsidiary is created with equal ownership rights of each partner.

**Characteristics of the Oil Sector in the Largest Oil-Producing Countries[1] Classified by Production Control of the National Oil Company (NOC)[2]**
*(In percent unless otherwise indicated)*

| | No State Ownership or Minority State Control | Majority State Control |
|---|---|---|
| Total share of world reserves in 2004 | 28 | 72 |
| Average oil production growth, 2000–05 | 16.7 | 6.1 |
| Share of country group in 2005 world production | 44 | 50 |
| Average 'Regulatory Quality' (percentile rank)[3] | 46 | 33 |
| Average 2005 government net debt as a share of GDP | 44 | 17 |
| *Memorandum* | | |
| Number of countries in group | 19 | 15 |

Source: BP Statistics; WEO; World Bank Governance Indicators, 2004; and IMF staff estimates.

[1]Includes the largest 34 countries in terms of proven oil reserves in 2004. Together they own 98 percent of world reserves and produce 94 percent of world oil.

[2]Most NOCs are 100 percent government-owned, but their participation in production varies by type and amount. A few countries do not have NOCs.

[3]*Regulatory Quality* refers to the ability of the government to formulate and implement sound policies and regulations enabling private sector development, based on a survey of 204 countries. A higher percentile rank indicates better quality.

national reserves.[2] NOC managers sometimes express concern that IOCs have a tendency to over produce fields in a quest to satisfy the short-term expectations of their shareholders, and that in the past they have not received the full benefits of production-sharing agreements. A number of governments have recently altered contracting laws and production-sharing rules with foreign investors so as to increase control over their resources to varying degrees (as in Bolivia, Ecuador, Venezuela, and Russia). For their part, IOCs have expressed frustration about changing "rules of the game," project delays, and dealing with the bureaucratic structures of NOCs. They believe the host governments do not always adequately factor in the risks associated with unpredictable political and tax environments.

Well-designed partnerships could lead to increasing investment levels in the oil industry as a whole, especially if the risks and returns from the production venture are appropriately distributed. Given that NOCs today own the majority of the world's reserves, IOCs are coming to terms with the reality that their future activity may have to increasingly take place in partnerships in which profits and control must be shared. In turn, governments of NOCs will have to work to provide a more stable and transparent investment environment and stronger governance of NOCs. Once these frictions are worked out, global investment in the sector would be better placed to respond to price incentives.

[2]Indeed, this may partly explain why profitability of international oil service companies has been even higher than oil and gas exploration and production companies since 2002 (see Figure 1.17); their services are in high demand by NOCs because they provide the know-how without generating competition for the NOC assets.

## References


Berg, Andrew, Phillipe Karam, and Douglas Laxton, 2006, "A Practical Model-Based Approach to Monetary Policy Analysis—An Overview," IMF Working Paper 06/80 (Washington: International Monetary Fund).

Caballero, Ricardo J., Emmanuel Farhi, and Pierre-Olivier Gourinchas, 2006, "An Equilibrium Model of 'Global Imbalances' and Low Interest Rates," NBER Working Paper No. 11996 (Cambridge, Massachusetts: National Bureau of Economic Research).

Dada, Wagner, 2005, "Modeling Investment Decisions for Oil Exploration Companies: Do International Oil Companies Differ from National Oil Companies?" (unpublished; Washington: International Monetary Fund, Research Department).

Erceg, Christopher J., Luca Guerrieri, and Christopher Gust, 2005, "Expansionary Fiscal Shocks And The Trade Deficit," International Finance Discussion Paper No. 825 (Washington: Board of Governors of the Federal Reserve System, International Finance Division).

Faruqee, Hamid, Doug Laxton, Dirk Muir, and Paolo Pesenti, 2005, "Smooth Landing or Crash? Model-Based Scenarios of Global Current Account Rebalancing," NBER Working Paper No. 11583 (Cambridge, Massachusetts: National Bureau of Economic Research).

———, forthcoming, "Would Protectionism Defuse Global Imbalances and Spur Economic Activity? A Scenario Analysis," NBER Working Paper (Cambridge, Massachusetts: National Bureau of Economic Research).

Kumhof, Michael, Douglas Laxton, and Dirk Muir, 2005, "Consequences of U.S. Fiscal Consolidation for the U.S. Current Account" in *United States: Selected Issues,* IMF Country Report No. 05/258 (July 2005), available at http://www.imf.org.

Lane, Philip R., and Gian Maria Milesi-Ferretti, 2006, "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004," IMF Working Paper 06/69 (Washington, International Monetary Fund).

Marcel, Valérie, 2006, *Oil Titans: National Oil Companies in the Middle East* (London and Washington: Brookings Institution Press and Chatham House).