1

The International Economy and Prospects for Developing Countries

Developments in early 2002 showed a cyclical rebound—

Macroeconomic stimulus, a rebound from a record trough in the high-tech sectors and a bottoming-out of inventory cycles, brought large parts of the global economy onto a recovery path at the end of 2001. Lower interest rates helped keep consumers' demand for durable goods strong. Together with fiscal easing, that demand provided support for the rebound in the United States and, to a lesser extent, in some East Asian and European countries. High-tech markets—in which technologies quickly become obsolete—returned to strong growth by creating replacements for old products. Inventory selloffs ceased, thereby contributing to an acceleration of gross domestic product (GDP) growth in early 2002.

The driving forces behind the initial phase of the recovery were strong, but short-lived, as business confidence remained weak. Inventory and high-tech cycles typically are short, and both appear to have peaked toward the middle of 2002. The effects of fiscal stimulus and monetary easing can also, under current circumstances, dissipate quickly.

—but uncertainty in financial markets has sapped momentum

In the second phase of a typical recovery, the upturn spreads to other sectors and other regions, and the driving force shifts from inventory dynamics to accumulation of fixed investment. In the current upswing, however, the second phase is in jeopardy because of tensions in financial markets, which reflect accumulated financial imbalances and significant uncertainties. These pressures have made the recovery in 2002 less uniform, and they are likely to moderate growth in 2003.

In Japan, deflation and high and rapidly growing government debt have placed severe limits on both monetary and fiscal stimuli. Combined with the fragility of the banking sector, which is burdened by bad loans and diminishing capital caused by lower equity values, financial uncertainty prevents the spread of recovery from export sectors to those that produce for the domestic market. The accounting scandals in the United States have undermined the trust in reporting systems. Investors, who have come to rely on continuously rising equity prices, now find it difficult to assess the profitability of firms. That difficulty sharply pushed up risk premiums in equity markets. European financial institutions were forced to adjust their balance sheets in the wake of large-scale defaults, notably by Argentina and several major U.S. firms, which probably played a role in suppressing a nascent recovery in European economies. In Europe and elsewhere, telecommunication sectors still suffer from overinvestment and high debt burdens, making a speedy recovery of capital spending in those sectors unlikely.

Uncertainty is keeping investors cautious, if not skittish, throughout the world. While

investors in high-income countries take their losses and replenish their reserves, they limit their exposure to developing countries and concentrate their assets in investment-grade borrowing countries.[1] Capital flows into large parts of Latin America dropped sharply, reflecting the aftermath of Argentina's default and the vicious combination of global uncertainty, domestic problems in some large countries, and intra-regional contagion. The reversal of capital flows—with the accompanying rise in spreads and depreciation of currencies—when combined with vulnerable balance-sheet characteristics triggered a dangerous worsening of debt dynamics in some Latin American countries. In such an environment, average per capita income in Latin America has fallen in 2002 for the second year in succession.

The rebound in 2002 was less uniform than anticipated—

Rapid recovery in the beginning of 2002, driven in part by sharp increases in the U.S. government's expenditure in the aftermath of terrorist attacks, has resulted in upward revisions of 2002 growth for the United States, East Asia, and Japan, relative to forecasts prepared in February (table 1.1). At the other extreme, growth in Latin America has been lowered by 1.6 percentage points for the year. This decrease reflects not only the crisis in Argentina, but also the major contractions of GDP in Uruguay and the República Bolivariana de Venezuela, plus slow growth in Brazil, Chile, and Mexico. Those events made the 2001–02 period the worst for the region since the debt crisis of the early 1980s. Consistent with higher-than-anticipated *global* growth, non-oil commodity prices in 2002 have risen more than anticipated. Nonetheless, the present rebound in commodity prices is modest from an historical perspective, thus highlighting the continuing downward pressures on prices tied to structural factors. Higher commodity prices have supported modestly improved performance in Sub-Saharan Africa.

—and the outlook for 2003 is for tepid growth

Reflecting financial uncertainty and the disappointing recovery of business confidence, projected growth for 2003 has been marked down for almost all developing regions, because a robust rebound in industrial country growth—driven by strong advances in investment—has become less likely. In line with these revisions, inflation, interest rates, and non-oil commodity prices are also likely to be lower. The sole exception to this pattern is the Middle East and North Africa region, where oil exporters have benefited from high oil prices during 2002. Several of these countries are seeing increased government expenditure, financed by rapidly mounting surpluses of oil revenues.

Investment cycles in developing countries are more volatile than in rich countries

With the sharp fall in global investment in 2001 and the uncertainty surrounding a rebound in capital expenditure, investment behavior has become a key element of the outlook. A closer look at investment cycles in developing countries suggests the following conclusions:

- Investment behavior in low- and middle-income countries is a determinant of overall volatility that is even more important than it is in high-income countries.
- Those developing countries with a stronger policy environment exhibit lower volatility in investment.
- Although in rich countries domestic fixed investment tends to drive foreign capital inflows, in middle-income countries the opposite tends to occur (that is, capital inflows typically drive domestic investment).

These conclusions imply that the middle-income countries are especially vulnerable to the current jitters in financial markets. Such countries are exposed to sudden reversals in

Table 1.1 Global conditions affecting growth in developing countries and world GDP growth

(percentage change from previous year, except interest rates and oil price)

	Current estimate		Current forecasts			Global Development Finance 2002 forecasts	
	2000	2001	2002	2003	2004	2002	2003
Global conditions							
World trade (volume)	**13.1**	**−0.5**	**2.9**	**7.0**	**8.0**	**1.8**	**8.3**
Inflation (consumer prices)							
G-7 OECD countries[a,b]	1.9	1.7	0.9	1.2	1.5	0.9	1.6
United States	3.4	2.8	1.5	2.1	2.3	1.5	2.4
Commodity prices (nominal $)							
Commodity prices, except oil ($)	−1.3	−9.1	5.0	5.8	4.4	1.3	7.3
Oil price ($, weighted average), $/bbl	28.2	24.4	25.0	23.0	20.0	20.0	21.0
Oil price (% change)	56.2	−13.7	2.7	−8.0	−13.0	−17.9	5.0
Manufactures export unit value ($)[c]	−2.1	−1.4	0.5	3.0	2.2	−0.5	3.6
Interest rates							
LIBOR, 6 months (US$, percent)	6.6	3.6	1.8	1.5	3.1	2.3	4.0
EURIBOR, 6 months (euro, percent)	4.5	4.2	3.4	3.2	3.8	3.0	4.0
GDP (growth)[d]							
World	**3.8**	**1.1**	**1.7**	**2.5**	**3.1**	**1.3**	**3.6**
Memo item: World GDP (ppp)[e]	4.5	2.1	2.8	3.4	4.0	2.4	4.3
High-income countries	**3.5**	**0.7**	**1.5**	**2.1**	**2.7**	**0.9**	**3.3**
OECD countries[f]	3.4	0.8	1.4	2.1	2.6	0.8	3.1
United States	3.8	0.3	2.3	2.6	3.1	1.3	3.7
Japan	2.1	−0.3	0.0	0.8	1.3	−1.5	1.7
Euro Area	3.7	1.5	0.8	1.8	2.6	1.2	3.3
Non-OECD countries	6.8	−0.7	2.3	3.7	5.3	2.7	5.3
Developing countries	**5.2**	**2.9**	**2.8**	**3.9**	**4.7**	**3.1**	**4.9**
East Asia and Pacific[f]	7.0	5.5	6.3	6.1	6.4	5.6	7.1
Europe and Central Asia	6.6	2.3	3.6	3.4	3.6	3.2	4.3
Transition countries	6.4	4.6	3.5	3.3	3.5	3.4	4.0
Latin America and the Caribbean	3.7	0.4	−1.1	1.8	3.7	0.5	3.8
Excluding Argentina	4.5	1.2	0.7	1.9	3.6	2.1	4.3
Middle East and North Africa	4.2	3.2	2.5	3.5	3.7	2.7	3.3
Oil exporters	3.6	2.4	2.4	3.7	3.6	2.2	2.8
Diversified economies	3.7	4.3	2.2	2.7	3.6	3.1	4.4
South Asia	4.8	4.4	4.6	5.4	5.8	4.9	5.3
Sub-Saharan Africa	3.2	2.9	2.5	3.2	3.8	2.6	3.6
Memorandum items							
Developing countries							
Excluding the transition countries	5.0	2.6	2.7	4.0	4.9	3.1	5.1
Excluding China and India	4.6	1.7	1.5	2.8	3.8	2.0	4.1

Note: OECD = Organization for Economic Co-operation and Development, bbl = barrel, EURIBOR = European interbank offered rate, LIBOR = London interbank offered rate, ppp = purchasing power parity.
a. Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
b. In local currency, aggregated using 1995 GDP weights.
c. Unit value index of manufactures exports from the G-5 countries to developing countries, expressed in U.S. dollars.
d. GDP in 1995 constant dollars: 1995 prices and market exchange rates.
e. GDP measured at 1995 purchasing power parity (international dollar) weights.
f. Republic of Korea income classification changed from middle to high income (July 2002). Both forecasts were adjusted for this revision.
Source: World Bank, November 2002 and *Global Development Finance 2002* projections of February 2002.

capital flows, which can dampen investment sharply and can undermine growth momentum. Countries with strong policy environments are more likely to avoid or smoothly absorb potential external financial shocks.

In the long term, faster growth can be achieved in most developing regions

Market reforms and trade liberalization during the 1990s have opened opportunities for accelerating technological advances throughout the developing world for the next 15 years. An exception is emerging East Asia, where some moderation of technological progress is anticipated, reflecting in part the extraordinarily rapid catching-up that occurred during the 1980s and 1990s. The acceleration of growth in many of the other regions is likely to coincide with increasing savings and investment rates. Demographic transitions are anticipated to boost saving rates in developing countries, while reducing them in high-income countries.

On balance, the declining availability of savings in the aging populations of high-income countries and the increased savings in the developing world—set against investment patterns needed to accommodate potential growth—imply that more and more developing countries will move toward surplus on the current account and that the recent shift from debt accumulation to debt reduction is likely to continue. As long as domestic credit markets continue to mature and public savings do not deteriorate, domestic savings can be expected to rise, and the required reduction in debt levels will not conflict with the required investment.

A recovery constrained by major risks

During the summer of 2002, investor risk perceptions increased and market sentiment deteriorated across large parts of the world's economy, thereby jeopardizing the global recovery that had started in the fourth quarter of 2001. Accumulated financial imbalances that had built up during the 1990s emerged as a critical factor that clouded the economic outlook. In the United States, the bursting of the equity bubble and cumulated private sector debt kept investors cautious and resulted in a continuous flight to quality, which moved the yield on government bonds to a 40-year low while hampering the recovery in private investment. In Japan, banking problems and the lack of scope for monetary easing and fiscal stimulus limited the spillover from an export-driven recovery to a rebound in domestic investment. In Europe, weakness was concentrated in the highly indebted telecommunications sector and in financial sectors that had to absorb sharp devaluations of their assets.

Bankruptcies and reductions in investment during the global downturn of 2001 and the subsequent first phase of recovery in early 2002 had not reduced corporate debt nor restored profitability sufficiently. In a number of cases, the downturn has generated new imbalances. Throughout the world, fiscal balances deteriorated and balance sheets of financial institutions weakened. Continued tension in financial markets made the recovery less uniform in 2002—as well as probably less robust in 2003—than would have been the case under more normal circumstances. Vulnerability to adverse shocks has increased, and even the potential for a "double-dip" recession scenario in the industrial countries cannot—at this juncture—be entirely ruled out.

Three distinct phases characterize recent developments. The first phase portrays the driving forces behind the initial phase of the recovery that started in late 2001, a recovery that was more robust in the United States and East Asia. These forces range from the end of inventory adjustment, monetary easing, and fiscal stimulus to a technical rebound in the high-tech industrial sectors. This picture normally would be characterized as a favorable environment for developing countries. That environment includes low inflation and interest rates, plus a significant recovery in global

trade and commodity prices, albeit a recovery from low levels. During the second phase, a recovery typically broadens to other regions and other sectors. Therefore, a recovery of profits and strong growth in fixed investment becomes the driving force that sustains or even accelerates growth. In the absence of such broadening and deepening, driving forces that underpin the initial phase would suddenly appear to become short lived, which is the situation today. Finally in the third phase—typically the shift from "recovery" to economic expansion—implications of the set of opposing forces (cyclical rebound and financial turbulence) for the medium-term global outlook (2003–04) are analyzed. The lack of uniformity in growth performance during 2002, following an almost synchronized slowing of growth across regions in 2001, is particularly notable. The growth projections for 2003 are more uniform across regions, but are distinctly weaker than would have been anticipated in a strong, synchronized global recovery.

The first phase of the global recovery was driven by policy stimulus—

In the wake of the terrorist attacks in September 2001, forceful monetary easing in the United States—and to a lesser extent in Europe—helped prevent a deepening of the global downturn. U.S. consumers benefited from historically low interest rates to boost their purchases of durable goods. Combined with double-digit growth in government spending—mainly driven by security, defense, and reconstruction efforts—the stimulus was sufficient to turn U.S. GDP growth positive, to 2.7 percent (annualized), in the fourth quarter of 2001. One quarter later, Japan, which suffered steep output declines for three quarters in succession, and Europe, having experienced only a modest fall in GDP, broke away from negative growth rates as well.

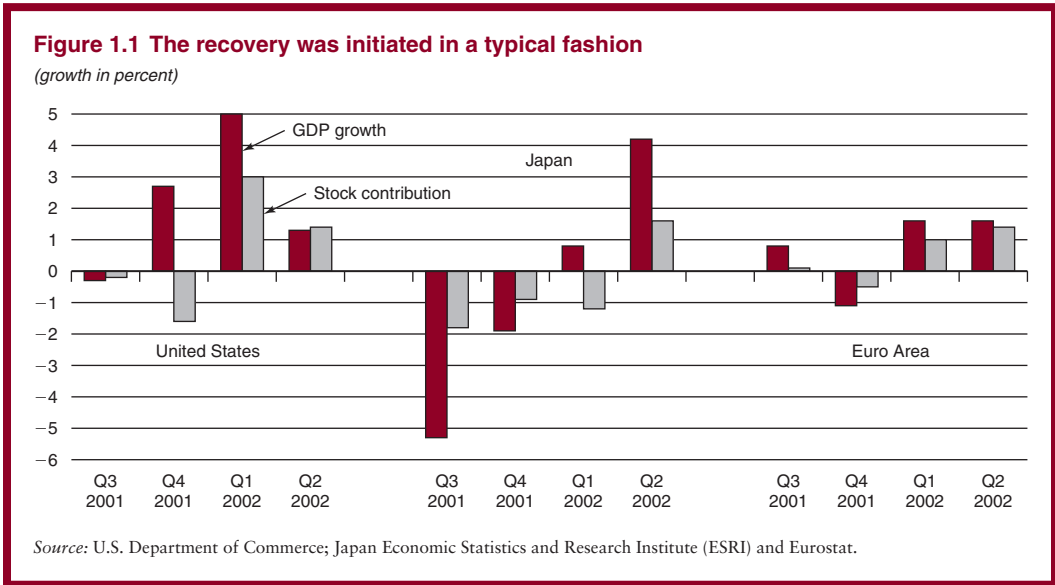The importance of U.S. domestic demand in this recovery is striking. During the first half of 2002, GDP advanced at a 3 percent annual rate, despite a drag of nearly 1.5 percentage points stemming from a deterioration of net exports. In contrast, output in Japan increased by 2.5 percent, of which foreign trade contributed 1.8 percentage points, while in the Euro Area, GDP growth of 1.6 percent was supported by almost 1 percentage point from positive net exports contributions.

—inventory dynamics—

Inventory dynamics played a pivotal role in the recovery, thus complementing macroeconomic stimulus efforts. The same reduction in the inventory stock that led to a negative contribution of stock building to GDP growth in 2001 implied a positive contribution of stock building to GDP growth in 2002. Once the lower level of desired inventories was achieved, stock building shifted from sharply negative to close to zero. The slowing of inventory liquidation significantly shifted the contribution to GDP growth from the second half of 2001 to the first half of 2002: that shift added 1.2 percentage points to the acceleration of GDP growth in both Japan and the Euro Area, and a full 2.2 percentage points in the United States (figure 1.1).
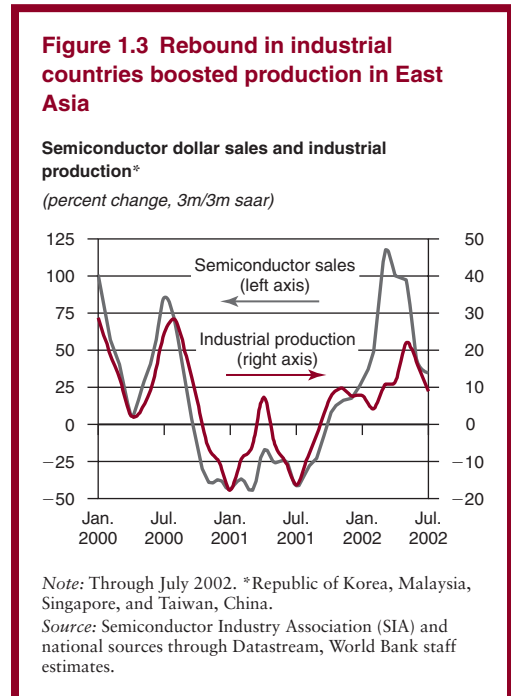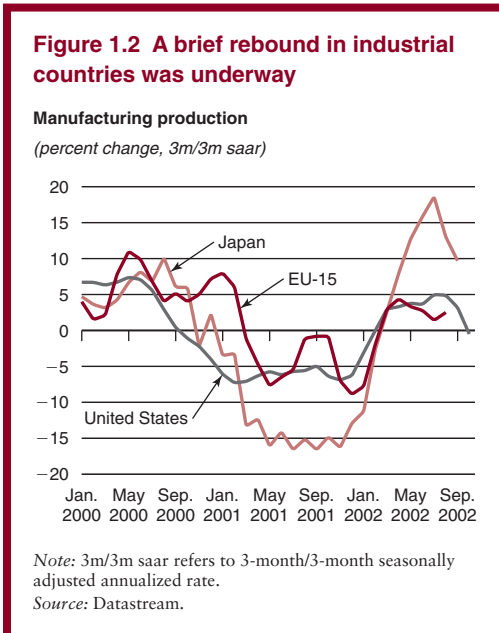
—a high-tech rebound—

Recovery in global high-tech markets was an equally powerful stimulant. After demand for semiconductors and related equipment plummeted during 2001, markets were anticipated to rebound sharply, but the scope of recovery exceeded expectations. There are several natural limits to declines at rates of up to 50 percent. The nature of the product—the technology of which becomes obsolete quickly—warrants a periodic return to high growth, as old products are replaced by new ones and as the introduction of advanced technologies generates new and growing markets. Defense- and security-related spending in the United States also played a role in bolstering demand (U.S. manufacturing orders for computers and communications equipment ratcheted to annual rates of 40 and 90 percent, respectively, in early 2002). As the

Figure 1.1 The recovery was initiated in a typical fashion

(growth in percent)

Source: U.S. Department of Commerce; Japan Economic Statistics and Research Institute (ESRI) and Eurostat.

rebound intensified, a strong boost was given to manufacturing output in industrial countries, and especially to production and exports from East Asia (figures 1.2 and 1.3).

Macroeconomic stimuli, inventory dynamics, and a powerful turnaround in high-tech markets in the industrial countries set the stage

for a broader global recovery through the traditional channels of international transmission. With world trade increasing, commodity prices firming, and interest rates—fostered by low inflation—standing at historically low

Figure 1.2 A brief rebound in industrial countries was underway

Manufacturing production

(percent change, 3m/3m saar)

Note: 3m/3m saar refers to 3-month/3-month seasonally adjusted annualized rate.
Source: Datastream.

Figure 1.3 Rebound in industrial countries boosted production in East Asia

Semiconductor dollar sales and industrial production*

(percent change, 3m/3m saar)

Note: Through July 2002. *Republic of Korea, Malaysia, Singapore, and Taiwan, China.
Source: Semiconductor Industry Association (SIA) and national sources through Datastream, World Bank staff estimates.

levels, developing countries faced a broadly favorable environment during the early part of 2002.

—and a recovery of global trade

World trade began to grow at near double-digit annual rates, recovering from a fall to negative territory during 2001. The World Bank's non-oil commodities price index gained 19.2 percent between October 2001 and October 2002 (figure 1.4), while the relevant index for Sub-Saharan African (SSA) countries rose further—by 30 percent. However, commodity prices are still one-third below their peak levels, which occurred during the summer of 1997, and several exporters, notably those in Caribbean countries that specialize in coffee and sugar, did not benefit from the rebound in average prices during the first half of 2002. Historically low inflation characterized not only the high-income economies, but also those in the majority of developing countries. The median inflation rate in developing countries is presently one-third of that during the 1990s, despite relatively high oil prices and more widespread adoption of flexible exchange rates. Indeed, double-digit inflation rates have become an exception, and countries experiencing recent

crisis, such as Argentina and Turkey, have posted inflation peaks of just 20 to 40 percent.

The second phase of the recovery is on uncertain footing

Notwithstanding the positive environment taking shape in early 2002, it became apparent before the middle of the year that financial strains were clouding the outlook. In the wake of large corporate bankruptcies and the accounting scandals in the United States, stock markets still seemed overvalued and debt levels seemed underestimated. Falling equity prices further eroded the capital base of Japanese commercial banks and other financial institutions. The growth outlook for Latin America deteriorated noticeably. Following Argentina's default, Uruguay and Paraguay were also hit hard through financial and trade linkages. Political uncertainty in the República Bolivariana de Venezuela triggered capital flight, and in several other countries debt dynamics worsened as a result of a combination of domestic problems and increased risk aversion in international capital markets (box 1.1). In Europe, financial institutions were hit hard by defaults in the United States and in Argentina, as well as by falling equity prices and a weakening of the dollar. And the

Figure 1.4 Non-oil commodities are recovering but stand well below previous peaks

(index, Sept./Oct. 2001 = 100)
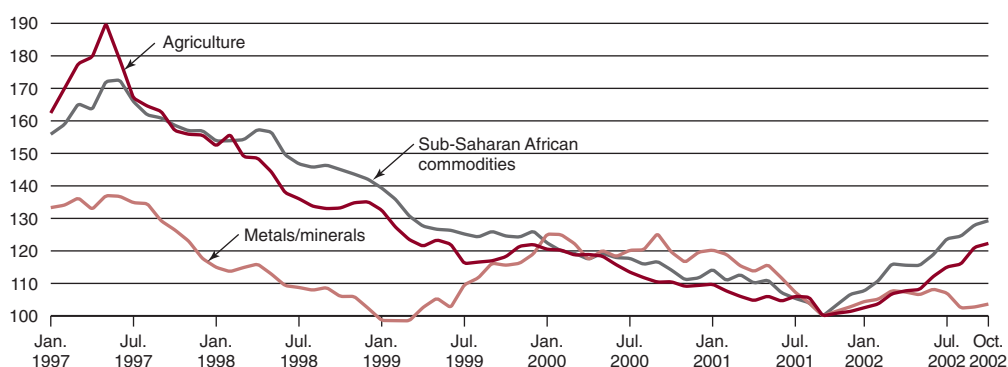
Source: World Bank staff.

Box 1.1   Is Latin America going against the rising tide?

Economic activity in Latin America and the Caribbean (LAC) has fallen behind production trends in other developing countries (box figure). The region's per capita gross domestic product (GDP) is estimated to have dropped by 2.6 percent in 2002, the only developing region where per capita output contracted during the year. This decline was the second consecutive year of contraction in per capita incomes—the worst performance since the beginning of the debt crisis in the early 1980s. Why is LAC going against the tide of rising global income growth?

The crisis in Argentina and the spillover effects on Southern Cone Common Market (MERCOSUR) countries (particularly Uruguay and Paraguay) clearly contributed the most to the decline in regional output during 2002. In Brazil, the combination of rising public debt, of declining export revenues tied to the collapse of demand in

Argentina, and of expanding political uncertainties in the run-up to the October elections all contributed to a weakening in financial market sentiment toward the country. The combination also resulted in a sharp reduction in private financing flows, which, in turn, led to a deterioration of public debt dynamics.

With financial markets increasingly averse to taking risks through financial flows to the major LAC countries over the course of the year, other countries in the region were unable to obtain significant new financing from international capital markets at reasonable terms. This lack of financing limited growth in high-debt countries with significant financing requirements. Political instability in República Bolivariana de Venezuela—an aborted coup in March that came on top of poor economic management in previous years—led to a large contraction in GDP of some 6 percent.

The crisis in Argentina and its fallout is a classic example of a vicious circle of instability in international financial markets and domestic vulnerabilities: high levels of debt; large financing requirements; and, in some countries, fixed exchange rates, political uncertainties, and weak banking systems. Once a crisis erupts, the vicious circle turns into a brutal downward spiral in which a depreciation of the currency, debt burdens, a deterioration of dollar returns, a rise in spreads, and a reversal of capital flows reinforce each other. Argentina's peso lost more than two-thirds of its value in the year to September. In a comparative perspective, stock prices increased over the same period by 20–30 percent in several countries in East Asia and Central Europe, currencies were stable and spreads did not increase substantially.

Latin America falls behind

(industrial production, index, 1995 = 100, 3-month moving average)

Source: National statistics; World Bank staff.

Source: World Bank staff.

plight of European telecommunications sectors continued to deepen under the weight of overinvestment and mounting debt loads.

Bankruptcies and sharp reductions in investment expenditure, driven by the erosion of equity values and a tightening of credit stan-

dards, have reduced some of the corporate debt, but they have also led to a deterioration of the balance sheets of financial institutions. To improve their reserves and to decrease their risk exposure, these financial institutions, in turn, sold part of their equity assets. In doing

so, they further fueled the fall in stock prices and amplified new imbalances. Similarly, the drop in capital flows has increased debt problems in several vulnerable middle-income countries.

Another example of new or deteriorating imbalances is the public sector deficit across the industrial countries. The U.S. general government deficit deteriorated from a surplus position of 2.3 percent of GDP in calendar year 2000 to a deficit of 2.5 percent in 2002, with 2.5 percentage points of that shift attributed to structural deterioration. In turn, the United States has not taken advantage of the recession to narrow its deficit on current account. Despite increases in the household savings rate and declines in the private investment rate, the current account deficit widened to a watershed mark of 5 percent of GDP as of the second quarter of 2002.

In the Euro Area as well, fiscal deficits have deteriorated from a 0.9 percent surplus to a like level of deficit, though this deterioration reflects mainly the work of automatic stabilizers. Unlike the U.S. fiscal deficit, it is not a structural deterioration. France, Germany, Italy, and Portugal are now approaching the current limits of a 3 percent of GDP deficit, limits that were imposed by the European Monetary Union Growth and Stability Pact. The original plan to eliminate deficits by 2004 has been abandoned and replaced by an agreement to reduce structural deficits by at least 0.5 percentage points per annum over the coming years. Japanese fiscal deficits remain extraordinarily high, at levels above 7 percent of GDP. And East Asian emerging economies, on average, continue to run relatively high deficit levels—above 4 percent of GDP—contrasted with a deficit of 1 percent before the 1997 crisis. In other parts of the developing world, primary surpluses are increasing, but improvement of the overall deficit remains difficult to achieve, given the burden of debt service.

Deteriorated government deficits, combined with low nominal interest rates, have left little room for further fiscal stimulus or monetary easing, although some lowering of

interest rates seems still likely, especially in the Euro Area. The limited scope for macroeconomic policy makes the risks surrounding the recovery even more severe. Policy solutions in the industrial world may best be focused on eliminating bad debts and restoring investor's sentiment by strengthening institutional oversight.

Capital flows to emerging markets are declining

Also important for middle-income countries was a continued decline in international market-based capital flows, despite low international interest rates and the initial phase of recovery in the industrial world. New gross capital market flows fell from $228 billion in 2000 to $175 billion in 2001, falling further to near $140 billion during 2002 (figure 1.5), with bank lending showing the steepest falloff. The latter point highlights the cautious position that international banks have adopted following financial crises in Turkey and Argentina and following defaults by several large U.S. corporations. These capital flow figures suggest that total external debt in the developing world continues to contract.

Net foreign direct investment (FDI) inflows to developing countries also trended down-

Figure 1.5 Private sector creditors have cut debt exposures so far in 2002
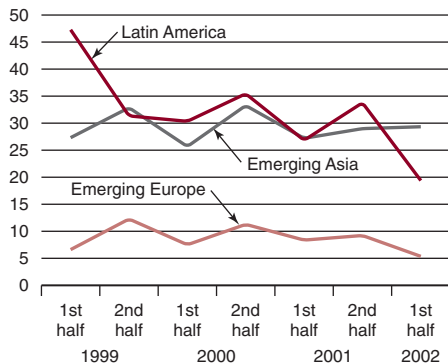
(gross market-based monthly flows in billions of dollars)
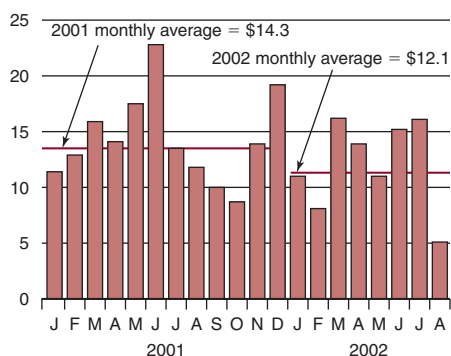
Source: Euromoney and World Bank staff estimates.

Figure 1.6 FDI flows to emerging Asia are proving to be quite resilient

Net inflows of FDI by region
(billions of dollars, half yearly rate)


Source: World Bank staff estimates.

financial strains currently battering corporate sectors are likely to have a restraining effect on investment. Falling equity prices, concerns about corporate debt, uncertainty about profitability, and cautious commercial bank lending in high-income countries tend to curtail financing for investment. Moreover, current business uncertainty regarding future demand growth serves as an additional restraining force on capital spending. Reduced capital flows to emerging markets place a damper on investments in the developing world. If one looks further ahead, large and increasing public sector deficits carry the potential to "crowd out" private investment in high-income and developing countries alike, although low interest rates on government bonds show that such crowding out is not yet a problem.

—and driving forces for the initial phase could be short-lived—
Without a solid upswing in investment and a concomitant broadening of recovery, the forces driving the first phase of the rebound

ward, from about $170 billion in both 2000 and 2001, to an estimated $145 billion during 2002 (figure 1.6). The decline can be almost wholly attributed to reduced flows into Latin America, as FDI into Central Europe and East Asia retained a resilient tone. That resilience underscored the importance of the course of integration into global and neighboring markets that China [recently gaining membership in the World Trade Organization (WTO)] and Central European countries [anticipating European Union (EU) accession] are following at present.

Financial strains may inhibit corporate investment—
During the fall months of 2002, investment was still declining in both high-income and developing countries, although the declines were bottoming out, which indicated the beginning of a turnaround (figure 1.7). In a typical recovery, once investment growth returns to positive territory, the recovery gets new impetus, because a virtuous circle of adjustments in the capital stock and in expected market growth may easily generate double-digit advances in capital spending. However,

Figure 1.7 Investment recovery is still uncertain

(4-quarter moving average, percentage change q/q, saar)
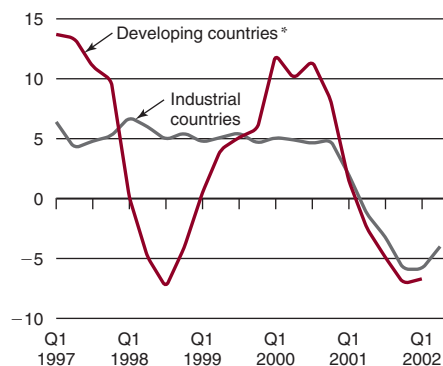
Note: q/q refers to quarter over quarter.
*Argentina, Brazil, Chile, Mexico, Czech Republic, Poland, Turkey, Indonesia, Rep. of Korea, Malaysia, Philippines, Thailand, and South Africa (45% of developing country total).
Source: Datastream and World Bank staff estimates.

could well become short-lived. Widening public sector shortfalls limit the range of options for fiscal policy. As France, Germany, and Italy approach Maastricht limits; as the U.S. deficit widens; and as Japan remains encumbered by continuing massive fiscal imbalance, opportunities for further fiscal stimulus in the industrial world have indeed become quite scarce. Moreover, it appears that several other driving forces for the initial recovery could quickly run out of momentum while their stimulative properties dissipate. Official interest rates now standing at historically low levels (particularly in Japan and the United States) leave little prominent role for further monetary easing. And the inventory and high-tech cycles—typically of short duration—probably reached peak levels by mid-2002.

Japanese output growth is now largely grounded in export growth, although consumers have begun to spend at more rapid rates—despite softening labor market conditions. Japan's strong export performance stands at risk and could fade quickly should foreign demand conditions worsen, should the yen resume its appreciation against the dollar, or both. In the United States, considerable uncertainty is attached to the outlook for consumer spending. Following robust purchases of durable goods during the third quarter—particularly automotive sales that were induced by zero interest incentives—questions arise concerning the tenor of growth into the final quarter of the year. Incentives cannot continue indefinitely, and massive equity-based wealth losses of the past two years could play a larger role in households' consumption decisions. Though low interest rates have spurred mortgage refinancings and "cash outs," which are anticipated to place some $100 billion to $200 billion of additional liquidity into the hands of consumers during 2002, this trend could prove limited if the recovery falters seriously. U.S. business remains cautious in investing or rehiring, in part because of the clouded outlook for growth in final demand. And in the Euro Area, especially in Germany, domestic demand is lackluster, and near-term growth

appears to be dependent on (and exposed to) global demand and financial conditions. Growth was disappointing in the first half of 2002, and expectations for only a sluggish advance in output during the second half of the year have now become more widespread.

—implying a much less supportive external environment for developing countries

Against this background—particularly the lack of a rebound in fixed investment across industrial countries and the intensification of financial uncertainties—the environment for developing countries is much less favorable. International interest rates may remain low, but borrowing costs have risen in step with increases in interest rate spreads. Trade volumes and commodity prices may be on the rise, but they are still at low levels, and momentum is weakening. Metal prices started to decline again in the middle of 2002, adding to the doubts about the strength of the global recovery. The further rise in agricultural prices was mainly due to specific supply disruptions—as civil strife in Côte d'Ivoire jeopardized cocoa production and as droughts in Australia, Canada, and the United States boosted wheat prices—and was not a sign of rising demand. Inflation remains low, but the danger of outright deflation has emerged in parts of developing and industrial East Asia—China, Hong Kong (China), Singapore, Taiwan (China), and Japan. Stable and low inflation is a prerequisite for solid growth and creates a favorable environment for effective monetary policy. However, in several cases, a sharp drop in inflation has increased real interest rates and has worsened debt problems. Although deflation limits the options for monetary policy, it tends to depress investment and demand for durable goods.

With market emphasis on financial strains and risk perceptions, it is important not to lose sight of several brighter spots in the developing world. Market reforms, including a diminution of trade barriers and an opening up to foreign competition achieved in

many countries during the 1990s, are noteworthy. These changes have contributed to faster growth in trade and in welfare gains, and the process continues across many countries.

China and several Central European countries are examples of successful reforming economies that are preparing for even further integration into foreign markets. This integration

Box 1.2   Integration pays off where policies are supportive

The recent global downturn has depressed export growth across the developing world, leading to a contraction in aggregate volume from the third quarter of 2001 through the first quarter of 2002. However, several countries—notably China, the Czech Republic, Hungary, and Poland—have been able to record impressive export volume growth (box figure). They have done so by increasing their market share, which has allowed them to partially offset the dampening effect of the global downturn. This increase in market share, in turn, reflects a continuing pattern of their intensifying integration into the global economy and of attendant inflows of FDI.

Greater integration with world markets has been achieved by China, for example, through its recently gained membership (December 2001) in the WTO, after years of negotiations and efforts to comply with WTO rules and standards. The three Central European countries have raised their trade

integration with global markets largely through the EU accession process, association agreements, and lower trade barriers, which will culminate with full membership in the EU, which appears now on track for 2004.

Reduction of trade barriers is but one factor that has made these countries successful and able to take advantage of trade opportunities. Macro stability, rapid institutional reforms toward liberalization of domestic markets, good or adequate levels of education, and competitive wages (relative to productivity growth) all contribute to the success.

These four countries have benefited from strong and sustained inflows of FDI from Western investors that have been building production capacity and transferring management skills and technical know-how, in addition to financing, such that these countries can gain additional market share as integration deepens. FDI inflows help expand production capacity and raise productivity (that is, they help to improve the recipient country's competitiveness). All four countries have posted high FDI inflows according to various measures. For example, using the ratio of the economy's share of world FDI inflows to the economy's share of world GDP, China, the Czech Republic, Hungary, and Poland all posted ratios of above 1 (or the world average) for 1998–2000—of 1.3, 2.7, 1.2, and 1.5, respectively. As a share of gross fixed capital formation, FDI inflows to these countries have also been high, particularly in China, where FDI inflows averaged 13 percent of gross fixed capital formation during 1990–99. In the Czech Republic, Hungary, and Poland, FDI inflows averaged 25, 19, and 16 percent, respectively, as a share of gross fixed capital formation during 1997–99.

Several developing countries show solid export performance

(volumes, 3-month moving average, percent y/y)
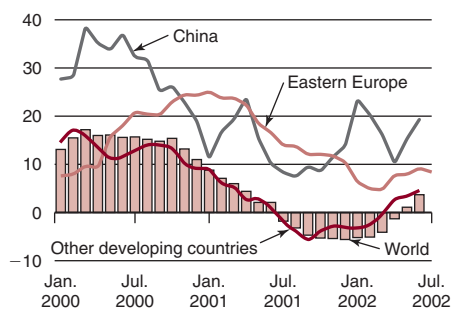
Note: y/y refers to year over year.
Source: Datastream and World Bank staff estimates.

Source: World Bank staff.

not only pays off in the long run, but also has assisted these countries in absorbing or even avoiding short-term shocks and fluctuations, by promoting business confidence and by facilitating export-oriented FDI. Perhaps more important, through relatively large inflows of FDI, these countries have become less vulnerable to turmoil in international financial markets (box 1.2).

The medium-term outlook calls for modest growth in the global economy—third phase

The baseline forecast reflects the interaction of strong opposing forces: the stimulative policies and the intrinsic recovery in stock building and high-tech production that work to accelerate global growth on the one hand, and the financial strains—high and rising debt levels, falling equity prices, and uncertainty about profitability—on the other hand. These driving and restraining forces affect the outlook in three ways:

- Global growth in 2002, the initial year of the forecast, shows little resemblance to the uniform recovery that one would normally expect after an almost synchronous downturn in 2001. Instead, it displays quite diverse patterns of activity across industrial as well as developing countries.

- Growth in 2003–04 is anticipated to be moderate. World GDP reflects a combination of a more gradual recovery in Latin America, an emergence of modest growth in Japan, and a generally subdued rebound in other parts of the global economy. The average outturn does not follow the typically strong patterns of recovery and expansion that is concurrent across regions and reinforced by accommodating macro policies.

- Downside risks to the baseline forecast are substantial. The global recovery appears vulnerable to additional shocks. (These points are discussed after we review the external environment and outlook for developing countries.)

The external environment is mixed

The driving forces may be found in expectations for growth of global trade volumes: 2.9 percent in 2002 and an average of 7.5 percent in the following two years (figure 1.8 and table 1.2). The restraining forces make a substantial rise in capital flows unlikely over the medium term. The modestly firming trends in non-oil commodities prices—5 percent in 2002 and averaging 5.1 percent in the following years—reflect the subdued recovery. The 5 percent gains in commodity prices remain far below historical patterns during booms. Increases in real commodity prices are expected

Figure 1.8 World trade rebounds along with GDP, 1998–2004

(percentage change)
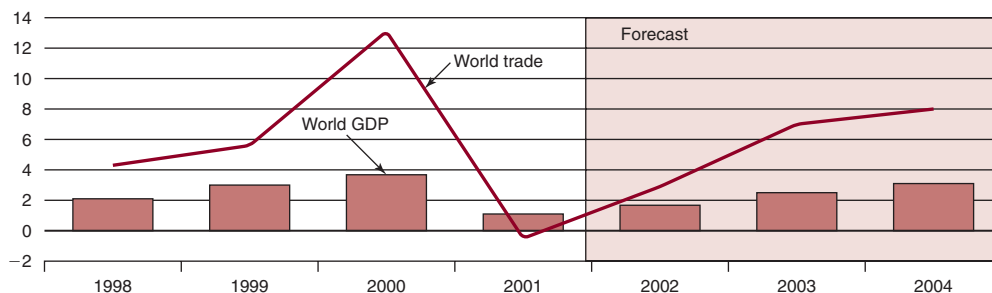
Source: IMF, OECD, World Bank, and World Bank projections.

Table 1.2   External environment for developing countries, 1991–2004

(percentage change from previous year, except interest rates and oil price)

Growth rates/ratios	1991–2000	1999	2000	Current estimate 2001	Current forecasts 2002	2003	2004	2002–04
Industrial country GDP growth	2.4	2.9	3.4	0.8	1.4	2.1	2.6	2.0
World trade growth[a]	7.2	5.6	13.1	−0.5	2.9	6.7	7.7	5.7
Industrial country import demand	6.9	8.5	11.6	−1.0	1.3	5.3	6.8	4.4
United States	9.4	12.4	13.7	−3.6	4.4	8.1	8.0	6.8
Japan	5.6	6.6	10.7	−2.8	−2.0	7.7	8.6	4.7
Euro Area	6.6	6.4	11.2	0.8	−0.5	4.0	6.6	3.3
Developing-country import demand	8.2	−1.3	16.9	4.5	5.6	10.1	10.0	8.0
Market growth for developing countries[b]	10.7	5.3	13.1	0.2	2.6	7.0	8.4	6.0
Non-oil commodity prices (nominal)	−1.4	−11.2	−1.3	−9.1	5.0	5.8	4.4	5.1
Agriculture	−1.3	−13.9	−5.5	−9.1	8.4	8.5	4.8	7.0
Metals and minerals	−1.8	−2.3	12.6	−9.6	−3.5	5.6	5.7	2.5
Real non-oil commodity prices[c]	−1.1	−11.0	0.8	−7.8	4.5	2.8	2.2	3.2
Oil price ($, weighted average), $/bbl	19.1	18.1	28.2	24.4	25.0	23.0	20.0	22.7
Manufactures unit value index[d]	−0.3	−0.2	−2.1	−1.4	0.5	3.0	2.2	1.9
Developing-country terms of trade	0.1	3.3	2.8	0.3	−3.2	−1.4	−1.3	−2.0
Terms of trade/GDP (%)[e]	0.1	0.7	0.6	0.1	−0.8	−0.4	−0.4	−0.5
LIBOR (US$, 6 months)	5.6	5.5	6.6	3.6	1.8	1.5	3.1	2.2
EURIBOR (euro, 6 months)	5.4	3.1	4.5	4.2	3.4	3.2	3.8	3.5

Note: bbl = barrel, LIBOR = London interbank offered rate, EURIBOR = European interbank offered rate.
a. Goods and nonfactor services.
b. Weighted average growth of import demand in export markets.
c. Deflated by manufactures unit value index.
d. Dollar-based export prices of manufactures in the G-5 countries.
e. Change in terms of trade, measured as a proportion to GDP (percent).
Source: World Bank, November 2002.

to be even more moderate, about 2.5 percent per year. Most of the increase in commodity prices in 2002 was due to a surge in agricultural prices, which bounced off cyclical lows: the agricultural index had dropped 40 percent below its peak, which was reached in 1997. The recent surge is to a large extent induced by supply factors: for example, droughts in Australia and the United States have boosted grain prices, and supply disruptions in Côte d'Ivoire and Ghana did the same for cocoa prices. Conversely, the rally in metal prices that started in October 2001, which is normally strongly correlated with the business cycle, stalled in the second quarter of 2002. The forecast for metal prices is one of decline in 2002, and of a return to 5–6 percent gains thereafter. This trend is another indication that the tenor of global recovery is anticipated to be modest.

The base forecast assumes that the current risk premium in the oil market gradually dissipates and that increased supply, both from Organization of Petroleum Exporting Countries (OPEC) and non-OPEC sources, can easily meet moderate increases in demand. This forecast would imply oil prices of around $20 per barrel by 2004. The lack of strength in the recovery is also reflected in the interest rate projections. The London interbank offered rate (LIBOR) and European interbank offered rate (EURIBOR) are anticipated to drop modestly further during 2003, but to increase in step with firming economic activity by 2004, at rates below 4 percent.

The recovery in global markets is shaped primarily by developments in industrial countries. At 1.4 percent in 2002 and an average of 2.3 percent in the following years, growth remains at or below potential, which is a rare phenomenon during a recovery (figure 1.9). In this forecast, inflation will accelerate little, remaining below 2000 or 2001 levels.

Figure 1.9 2002 marks the start of a moderate recovery

(GDP growth rate in percent)

Developing countries

Forecast

Industrial countries

World GDP

1998 1999 2000 2001 2002 2003 2004
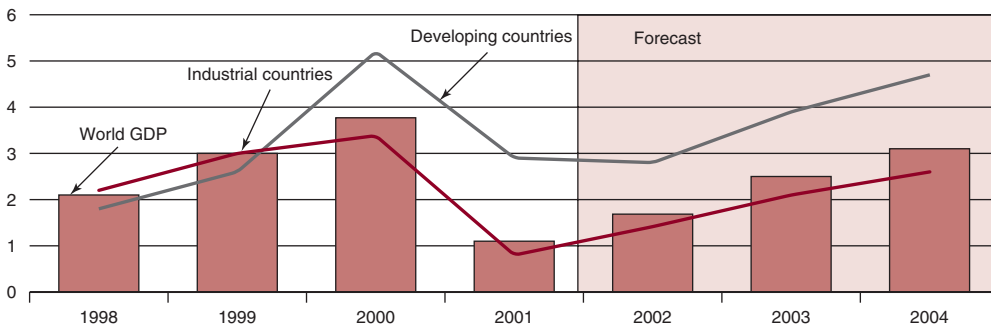
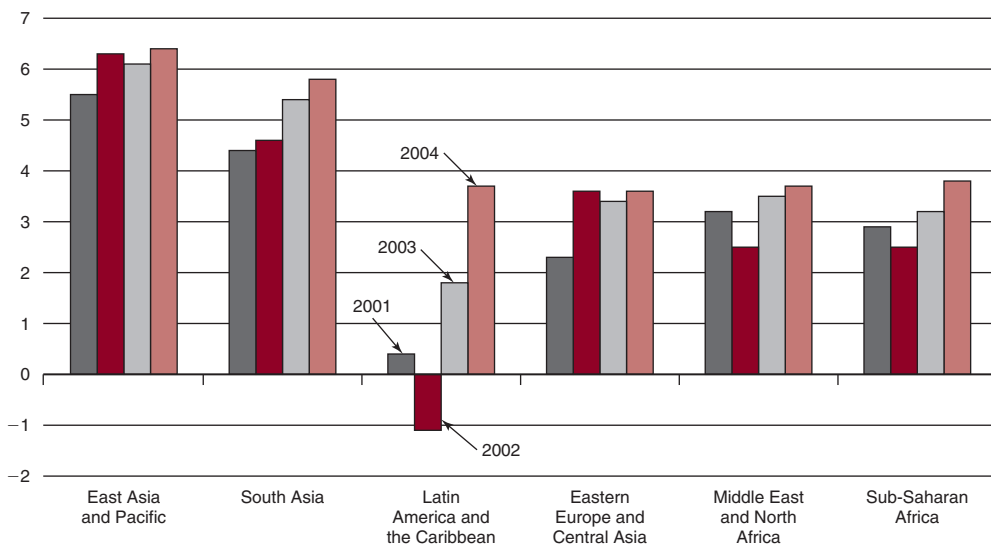*Source:* World Bank data and projections.

An outlook for moderate growth across developing regions—

What does this environment imply for output growth in the developing countries? In 2002, a strong recovery in East Asia coincides with a disappointing performance in Latin America, where GDP declined by 1.1 percent (excluding Argentina, where GDP plummeted by nearly 12 percent, and growth in the region slowed from 1.2 percent in 2001 to 0.7 percent in 2002). The region's per capita income fell 2.6 percent after a drop of 1.2 percent in 2001, which was the worst performance across two years since the debt crisis in the early 1980s (figure 1.10). Oil exporters, particularly in the Middle East and North Africa (MENA),

Figure 1.10 LAC and MENA are not experiencing the recovery

(developing countries GDP growth, percent change)

2004

2003

2001

2002

East Asia and Pacific | South Asia | Latin America and the Caribbean | Eastern Europe and Central Asia | Middle East and North Africa | Sub-Saharan Africa

Source: World Bank projections.

follow an independent growth pattern, which, to some extent, is the same for developing countries that are rapidly integrating into foreign markets (for example, Central European countries, China, and Mexico), where exports were recently able to outperform world trade growth as a whole (see box 1.2).

Average growth in 2002 for developing countries is anticipated to be 2.8 percent, 0.3 percentage points lower than was expected in the February 2002 forecast and 0.8 percentage points lower than was projected in the December 2001 forecast. Even with the bene-

fit of hindsight, it is quite difficult to disentangle the set of recent shocks and their effects on developing countries. Yet the downward revisions do not contradict the assessment made in the fall of 2001 that adverse effects stemming from the terrorist attacks of September 2001 would not be limited to the United States, but would spread to developing countries as well (box 1.3).

Sharply different growth patterns are likely to characterize economic activity across countries and regions in the short run, as jittery financial markets affect the vulnerable and

Box 1.3 The terrorist attacks of September 11, 2001 had an economic effect

Shortly after the terrorist attacks of September 11, 2001, the World Bank concluded that the economic effects would be most severe in the United States but would be significant in developing countries. The main transmission mechanisms were thought to be:

- Tourism revenues would decline, especially in South Asia, the Middle East, and the Caribbean.
- Increased risk perceptions in international markets would make oil prices more volatile, foreign capital less readily available, and transportation more costly.
- There would be delayed recovery in the United States, where immediately after the attacks air traffic was constrained, equity prices had declined sharply, and consumer confidence had plummeted. That delay would also hamper the recovery in world trade, commodity prices, and financial flows.

Of the developing world, Latin America was thought to be the hardest hit because of its proximity to the United States, its dependence on tourism revenues and commodity prices, and its vulnerability to financial shocks. Countries in Sub-Saharan Africa were also vulnerable because they have limited options to absorb adverse shocks.

Even with the hindsight of a year, it still remains quite difficult to assess the independent effect of 9/11 on the global economic environment. Not only are the counterfactuals unknown but new shocks, such as the financial crisis in Argentina or the emergence
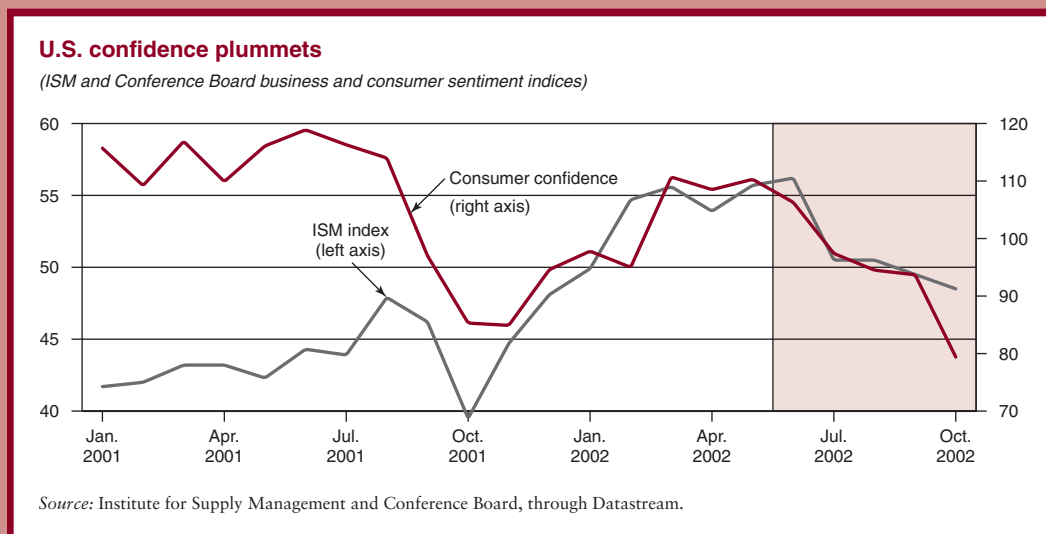
of accounting scandals in the United States, complicate the picture.

The fiscal stimulus and rapid monetary easing in the United States probably prevented a serious delay in the U.S. recovery and in world trade growth. Non-oil commodity price increases have slightly outperformed forecasts made in the fall of 2001. However, the steep decline in tourism revenues and the increase in risk perceptions did materialize, and the outlook for developing countries has further deteriorated, especially for Latin America. This observation suggests that 9/11 did exert strong influence in shaping ensuing economic trends in developing countries, albeit reinforced by other factors.

Following continuous and robust growth over the past decade, global tourism arrivals declined by 0.6 percent in 2001, tied in large measure to the effect of the terrorist attacks. The most-affected developing regions were South Asia (down 6 percent), Latin America (down 4 percent), and the Middle East (down 3 percent).

Business and consumer confidence across the industrial centers fell abruptly in the aftermath of the attacks. Although the losses evaporated within 2 months as the recovery took shape, the tenor of business and financial market confidence has continued to be exceptionally fragile (box figure). This factor was one underlying the decline of capital market flows to emerging market recipients in 2002, as well as the rise in bond markets.

Box 1.3   *(continued)*

U.S. confidence plummets

(ISM and Conference Board business and consumer sentiment indices)

Consumer confidence (right axis)

ISM index (left axis)

Source: Institute for Supply Management and Conference Board, through Datastream.

Developing countries' GDP growth in 2002 has been limited to 2.8 percent—about 0.8 percentage point below that expected one year ago (notably, figures that included an assessment of the 9/11 effects). Although not all barriers to stronger growth are linked directly to the terrorist attacks, most of these developments took form under the influence of a global environment that was highly unsettled by the destruction of the New York World Trade Center.

———————————

Source: World Bank staff.

highly indebted developing countries more severely than countries with lower debt ratios. Though the forecasts for 2003—and especially for 2004—display acceleration of growth that tends toward more uniformity across regions, that acceleration is weaker than one would expect in a strong, synchronized global recovery.[2]

The forecast for Latin America and the Caribbean (LAC) assumes some rebound in Argentina, where output has fallen some 20 percent below 1998 levels, but the rebound is insufficient to return to earlier prevailing levels within the time horizon of this forecast. Modest growth rates are anticipated for Brazil and most other countries of the region. That growth is grounded in a recovery in global trade and an end to the freefall in Argentina, together with the pursuit of policies geared toward reducing financial strains. Mexico and some Central American and Caribbean countries are in position to benefit most from the expected upswing in the United States, and Mexico's growth in particular is anticipated to exceed that of most Latin American countries.

—has the strongest growth evident in East Asia—

Prospects for developing East Asia and Pacific (EAP) appear more buoyant than those for other regions, as growth is expected to reach 6.4 percent by 2004. Continued solid expansion in China and recovery in most other countries—albeit with growth rates that remain below the robust performance of 2000—underpin this view. Favorable prospects do

not imply that risks are negligible, however. East Asia remains vulnerable to oil price spikes, to uncertain demand conditions in the United States, and to the fragile state of the Japanese commercial banking system and growth prospects there. Moreover, the dynamics in high-tech markets remain volatile. Options for domestic stimulus are more limited than in previous years because in most countries fiscal deficits have widened and interest rates stand at low levels.

In Europe and Central Asia (ECA), growth is expected to remain strong, but it will be grounded in a highly differentiated outlook between the Central and Eastern European (CEE) group of countries and the hydrocarbon exporters that dominate growth trends in the Commonwealth of Independent States (CIS—Russian Federation, Kazakhstan, and several smaller states). For the former group, output growth is projected to accelerate from 2.3 percent in 2002 to 3.1 percent and 4.3 percent in 2003 and 2004, respectively. Activity is expected to be driven by increased import demand from the EU and by intensification of the EU's accession process. For Turkey (included in this group), assuming that there is relative political stability and that the new government continues to pursue the current reform path, recovery is expected to strengthen in 2003. In contrast, growth is anticipated to ease in the CIS subregion in the years through 2004 (through fiscal and trade linkages to the hydrocarbon exporters in particular), assuming a significant medium-term decline in the oil price. CIS GDP is anticipated to decelerate from 4.4 percent in 2002 to 3.5 percent and 3 percent in 2003 and 2004. These divergent trends combine to shape the path of growth for the broader region, from 3.6 percent in 2002 to an average of 3.5 percent in the years following.

Growth in the Middle East and North Africa (MENA) region is expected to revive in 2003–04 to average 3.6 percent, as hydrocarbon output increases in line with global energy demand, and as accumulated oil-surplus funds are progressively committed and expended on infrastructure and other development activities, especially in Algeria, the Islamic Republic of Iran, and Saudi Arabia. Growth among the diversified exporters should increase to an average of 3.2 percent, as drought conditions ease in Morocco and Tunisia and as fiscal deficits are brought under tighter control and business confidence returns in Egypt—as the government there sets an appropriate interest rate and pushes ahead with policies, such as privatization, that will increase international investor confidence. Risks to this outlook are substantial, however, with political tensions mounting during apparent preparations for military action in Iraq. At this juncture, the baseline does not explore these potential developments, but rather focuses on the country-specific and region-specific economic fundamentals, as well as global factors that contribute to shape the outlook.

—and South Asia

A forecast of consistent growth in the South Asia region (SAR) of well above 5 percent over 2003–04 comes after a significant cyclical downturn in 2001, when manufacturing output in India and Pakistan stopped growing and when GDP growth mainly reflected continued expansion in the service sectors. The main challenge for the subcontinent remains fiscal reforms to curb over-large government deficits and to promote further trade liberalization. With almost-balanced current accounts and with substantial capital flows into Pakistan, external financial tensions remain limited at present. But, it is expected that the effects of accumulated fiscal debt will, at some future point become an obstacle to achieving the acceleration in growth required for substantial alleviation of poverty levels.

Growth in Sub-Saharan Africa (SSA) remains restrained by unfavorable domestic conditions, ranging from civil strife, to droughts, to macroeconomic imbalances, and to the AIDS epidemic. Elements of the external environment should, however, provide some support for a modest acceleration of growth over the next years. Despite a relatively sluggish pickup

in world GDP growth in 2003–04, a robust recovery is anticipated for African trade volumes, ratcheting from growth of 3 percent in 2001 toward 6 percent by 2004. That recovery should be accompanied by generally firmer non-oil commodity prices (exceptions are cocoa and gold, where prices have surged to unsustainable levels). The resulting terms of trade gains should support relatively buoyant external performances by African non-oil exporters. For oil exporters of the region, the price of crude is expected to weaken in the medium term. Even so, oil sectors will remain profitable, and production and export volumes are anticipated to rise—from Nigeria and other producers in the Gulf of Guinea, as well as from Angola's offshore sector.

In the domestic sphere, agricultural production will benefit from a return to more normal weather patterns in southern Africa, thus contributing to a recovery of domestic output and expenditure. On balance, GDP growth for the region is expected to rise from 2.5 percent in 2002 to 3.2 percent in 2003 and 3.8 by 2004. The overall acceleration reflects gains by non-oil exporters, which will more than offset modest retrenchment by oil producers. The current projection for the region represents a slight deterioration of prospects compared with the spring 2002 forecast, which is consistent with the overall downgrading of expectations for world output and trade growth. Nevertheless, though performance will continue to lag behind other developing regions, per capita incomes are set to resume positive growth following several years of stagnation.

Risks to the base case are substantial

The world recovery is clouded by substantial uncertainties in the immediate to near term. These uncertainties carry with them implications for medium-term developments in global growth and financial flows. Among critical factors in the outlook are (a) continued financial turbulence in high-income countries that could jeopardize a rebound in investment; (b) a reversal in capital flows to emerging markets, thereby heightening tensions in several vulnerable middle-income countries; and (c) the risk of higher oil prices, which are associated with prospective developments in the Middle East.

The base case presents a moderate but steady recovery in investment; it effectively rules out financial crises in middle-income countries and foresees a gradual decline in oil prices. If downside risks materialize, adverse outturns in these domains could easily occur at the same time or could, in sequence, reinforce cumulative effects on the economy. To gauge the sensitivity of economic recovery to these risks, we have traced the possible effects on the economic outlook of these elements. The results underscore the set of tensions embedded in the base-case forecast and can illuminate the magnitude of potential downside risk to the projections—with particular focus on the implications for developing countries.[3]

Global recovery could be delayed until 2004

Table 1.3 outlines the global effects of a low-case scenario in which the risks highlighted above occur essentially at the same time, but each of the adverse shocks is fairly short lived. The scenario reflects the joint effects of a temporary relapse to negative growth in the industrial country's investment cycle, of short-lived financial disruptions in several middle-income countries, and of a momentary spike to $45 per barrel (bbl) in world oil prices. The scenario suggests that, rather than an acceleration of global growth in 2003 to 2.5 percent as in the base case, a continuation of sluggish output advance in a range of 1.9 percent could characterize the year. Contrasted with base-case forecasts, cumulative differences over 2003–04 in world trade growth, OECD inflation, and interest rates are fairly substantial. The latter element reflects a strong monetary policy response to the financial and real disturbances of the scenario. OECD output growth is dampened by 1 percentage point, and for developing countries, it is dampened by 0.8 point over the period (figure 1.11).

Table 1.3   Global effects in a low-case scenario, 2003–04

	2003		2004		2003–04
	Scenario	Diff. (base)	Scenario	Diff. (base)	Cum. diff.
GDP growth (%)					
World	1.9	−0.6	2.7	−0.4	−1.0
Industrial countries (OECD)	1.5	−0.6	2.2	−0.4	−1.0
Developing countries	3.0	−0.9	4.8	0.1	−0.8
Consumer price index inflation (%)					
Industrial countries	2.2	0.1	1.2	−0.6	−0.5
Developing countries (median)	5.0	0.6	4.4	0.0	0.6
Short-term interest rates (%)					
Industrial countries	2.9	−0.3	3.3	−0.8	−1.1
Trade volumes (%)					
OECD imports	5.5	−1.3	7.5	−0.4	−1.7
Developing-country exports	9.3	−1.0	9.2	−0.3	−1.3

Source: World Bank, November 2002.

Among industrial countries, growth profiles in the United States and Japan are more adversely affected. This is linked to the relapse of fixed investment spending during 2003, with less room for monetary easing than exists in the Euro Area. Among developing regions, Latin America will feel the initial brunt of diminished capital inflow during 2003 (growth falling substantially below baseline), but it will rebound with some vigor as conditions equilibrate in 2004. East Asia—with strong links to export markets in all three industrial centers—will also suffer a sharp falloff in growth, but less so than Latin America.

Initially, inflation increases slightly in reaction to the rise in oil price. However, when oil prices start falling again and the effect of lower growth becomes noticeable, inflation will drop in high-income countries, thereby triggering substantial monetary easing compared with the baseline. In developing countries, inflation will remain on average above its base-case level, as higher oil prices are complemented by devaluation of several currencies in reaction to financial tensions.

Table 1.4 breaks out for 2003 the contributions of the individual risk scenarios (outlined below) to the overall low-case simulation. A relapse of investment in the industrial countries carries the largest downside potential to the global outlook, which affects output growth, world trade, and interest rates most acutely. Developing-country growth is more affected under the restraint of capital flow scenario, but is equally diminished by developments under the G-7 investment scenario and by higher oil prices. The latter scenario

Figure 1.11 Low case: world trade and other indicators will be much lower than the baseline

(cumulative differences, 2003–04; low-case scenario versus base-case scenario, percent)
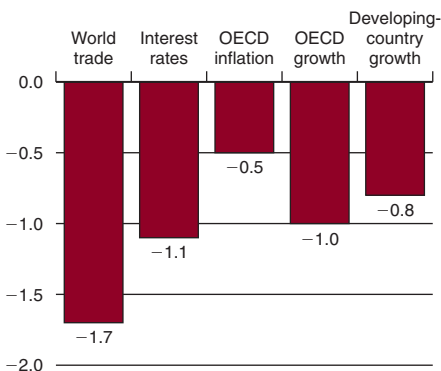
Source: World Bank.

Table 1.4 Low case: contributions to global effects in 2003

	Total	Diff. (base)	Investment	Capital flows	Oil prices
GDP growth					
World	1.9	−0.6	−0.3	−0.1	−0.2
Industrial countries (OECD)	1.5	−0.6	−0.3	−0.1	−0.2
Developing countries	3.0	−0.9	−0.2	−0.5	−0.2
Consumer price index inflation (%)					
Industrial countries	2.2	0.1	−0.1	0.0	0.2
Developing countries (median)	5.0	0.6	−0.1	0.1	0.6
Short-term interest rates	**2.9**	**−0.3**	**−0.3**	**−0.1**	**0.1**
World trade	**5.8**	**−1.3**	**−0.9**	**−0.1**	**−0.3**
OECD imports	5.5	−1.3	−1.0	0.0	−0.3
Developing exports	9.3	−1.0	−0.6	−0.2	−0.2

Source: World Bank, November 2002.

prospectively could hamper a fuller easing of monetary policy across the industrial centers, with growth suffering commensurately.

Financial market turbulence in high-income countries could trigger a relapse in the investment cycle—

Though investment growth momentum is now building in selected sectors and countries, the potential for relapse looms large as imbalances and uncertainties remain acute throughout the industrial world. The low-case scenario assumes that the growth of real business investment in industrial countries drops to negative territory (−0.7 percent) during 2003, which would be 3.5 percentage points of growth below the baseline path. Spillovers into 2004 carry cumulative growth differences in capital spending to 6.5 percentage points (figure 1.12).

If one examines the scenario environment among the industrial countries, cumulative inflation over 2003–04 is reduced by 0.5 percent. At the same time, the profile of short-term interest rates reflects reductions that are more than the improvement in inflation performance, which represents a substantial easing of monetary policy in the wake of developments. The rate of unemployment rises by 0.4 percentage points in OECD countries. Among prominent growth effects, industrial country output gains are dampened by

Figure 1.12 G-7 investment falls sharply
(base-case scenario and low-case scenarios, volume growth, percent saar)

Source: National statistics; World Bank projections.
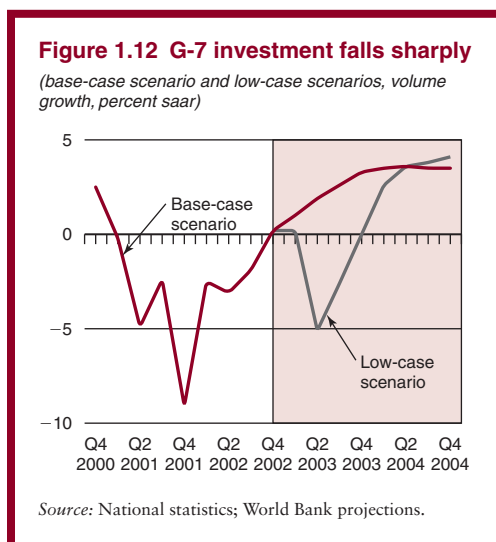
0.4 percent in 2003 and by a further 0.3 percent during 2004, as multiplier effects place pressure on household consumption. With the compression of imports, adverse growth effects in the major industrial countries are transmitted to smaller advanced economies, while weakened demand for commodities places downward pressure on nonenergy prices, thus affecting developing countries' terms of trade adversely. On balance, GDP growth in developing countries will decline by 0.3 percentage points relative to the base figures during 2003–04.

—while financial tensions pose difficulties for emerging markets—

Under a scenario of substantially lower inflows of private capital into countries with weak or declining credit ratings and with large financing requirements, interest rates rise, exchange rates depreciate, or both, which raises the cost of servicing debt and results in difficulties in meeting debt payments for both the public and private sectors. To understand the possible implications of such development, we performed a simulation in which capital flows to selected emerging market countries were assumed to drop by 15 percent below the baseline forecast in 2003, while spreads on international debt would increase substantially.

With these assumptions, the Latin America region will suffer an average falloff in output growth of 1.9 percentage points compared with the baseline in 2003. Rebound in response to eventual equilibration in exchange and interest rates, as well as to falling risk spreads, should be grounded in stronger exports, and output growth rises some 0.9 percentage point above the base in 2004. The cumulative fall in regional growth amounts to 1.1 percentage points during 2003–04. This fall is a reflection of the strong dependence of Latin America on capital inflows, whereas reversals in capital flows tend to have far-reaching consequences for domestic economies in that region (figure 1.13). Central Europe is another region that is affected by the reversal in international capital flows, although the greater diversity within the region makes the overall effect smaller than for Latin America.

—and higher oil prices could temporarily (yet moderately) dampen recovery

Crude oil prices have risen to more than $29/bbl because of expectations of a supply disruption in Iraq and of increasingly tighter market fundamental conditions. Crude oil stocks fell sharply in the third quarter of 2002, particularly in the United States. The drop was due to high runs of refined products, a decline in Iraqi crude exports, and continued restraint by OPEC to limit exports in support of higher

Figure 1.13 Investment growth and net capital flows* into Latin America are strongly correlated

(4-quarter moving average, percent GDP)   *(4-quarter moving average, percent saar)*
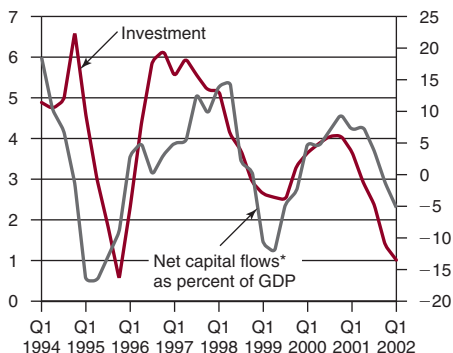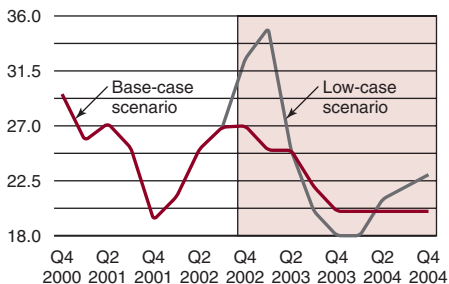
*Net capital flows defined as CAD—addition to reserves-IMF funds.
Source: Datastream and World Bank staff estimates.

prices. A so-called war premium on prices has been estimated at up to $8–$9/bbl. The base case assumes that the oil market normalizes with further increases in non-OPEC supply, with a modest rise in OPEC quota, and with a dissipating of the war premium. These assumptions might turn out to be too optimistic.

With continued tensions in the Middle East and with the possibility that, for example, some 2 million barrels per day (mb/d) of Iraqi oil exports would be temporarily lost to the market, oil prices might rise well above $30/bbl—partly because of low stocks and tight market conditions—and might peak at $45/bbl during the height of the disruption. However, it is likely that any loss in supply will eventually be replaced by other OPEC producers. They currently have about 5 million barrels per day (mb/d) of spare capacity—of which Saudi Arabia alone has some 3mb/d. Or supply will otherwise be replenished. Prices could fall relatively quickly below $20/bbl by 2004 before OPEC begins to restrain output as world demand increases, as the organization attempts to bring prices back into its target price band of $22–$28/bbl (figure 1.14).

Figure 1.14 Oil prices spike

(base-case and low-case scenarios; oil price $/bbl)

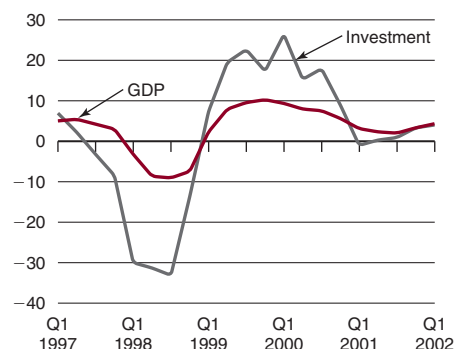*Source:* World Bank data; World Bank projections.

Figure 1.15 Investment is more volatile than GDP in East Asia

(4-month moving average, percentage change q/q, saar)

Note: Indonesia, Rep. of Korea, Malaysia, Philippines, and Thailand.
Source: Datastream and World Bank staff estimates.

Figure 1.16 Investment is more volatile than GDP in Latin America

(4-month moving average, percentage change q/q, saar)

Note: Argentina, Brazil, Chile, and Mexico.
Source: Datastream and World Bank staff estimates.

On a cumulative basis, a $2.50/bbl increase in oil price above baseline levels (but with dynamics as outlined above) will yield a moderate fall in global growth of 0.1 percent during 2003–04. Effects during 2003 will be somewhat more pronounced, however: a drop in world output of 0.2 percentage points. Inflation and interest rates in the industrial countries will be boosted modestly, by some 0.2 and 0.1 percentage points, respectively.

Investment cycles in developing countries

For developing countries, the risk of an untimely interruption to the recovery in global investment comes after a period of sharp swings in investment in the past five years. During the East Asian crisis, investment fell at an annual rate of 30 percent, three times the fall in output (figure 1.15). Crises in Argentina and Turkey dominated recent developments in Latin America and Central Europe, respectively, with regional investment declining at annual rates of 15–20 percent (figures 1.16 and 1.17). The dynamics of investment are much more forceful than that of output.[4]
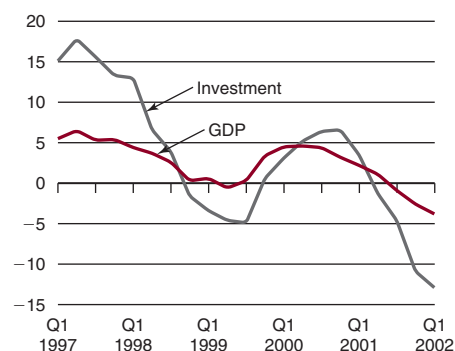
This section looks at three important patterns:

- The volatility of investment, relative to the volatility of output, and comparisons of developing with high-income countries.

- The effects of improvements in the investment climate on the volatility of investment and output.

- The role of capital flows that influence the investment cycle in developing countries.

23

Figure 1.17 Central Europe and Turkey experience greater volatility in investment than in GDP

(4-month moving average, percentage change q/q, saar)
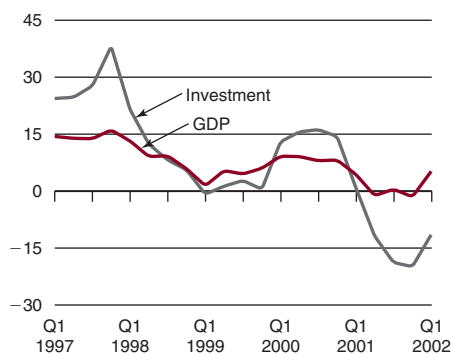
Note: Czech Republic, Poland, and Turkey.
Source: Datastream and World Bank staff estimates.

Table 1.5 Relative volatility of investment is high in developing countries

	1971–80	1981–90	1991–2000
Low income	4.6	5.2	7.6
Middle income	4.9	3.6	4.5
High-income OECD	2.9	3.2	3.5

Note: This table presents unweighted averages of country-specific standard deviations of investment growth as a ratio to the unweighted average of standard deviations of GDP growth.
Source: World Bank.

Investment cycles are more pronounced in lower-income countries than in higher-income countries

The volatility of investment growth relative to the volatility of output growth is twice as large in low-income countries as in high-income economies—and volatility has increased over time (table 1.5). An understanding of the investment cycle is pivotal to the explanation of overall cyclical behavior in developing countries.

A similar picture emerges if one examines a different measure of the cyclical component of investment, namely the percentage deviation from trend.[5] Figure 1.18 displays the mean and standard deviation of that measure

for some 160 countries over the 1990–2000 period.[6] The volatility of the cyclical components of investment declines steeply with higher income per capita.

Explanations for the high volatility of investment in low- and middle-income countries will vary from large external shocks relative to the size of the country to a poor investment climate. Properly functioning domestic financial institutions may smooth cycles by allowing additional savings to be channeled to investors during downturns.

Poor countries, on average, tend to be relatively small economies. Thus, the GDP of an average low-income country during the 1990s was $25.6 billion, barely 2.5 percent of the average high-income country. Baxter and Crucini (1993) and Crucini (1997) argue that, as a result, external shocks are relatively large in proportion to GDP, which explains reasonably well the patterns observed in figure 1.18. For example, international capital flows can easily be much larger from the standpoint of a small country, and reversals in capital flows can have a relatively large effect. The decision by a French multinational to invest $100 million in Senegal instead of at home would reduce France's investment spending in 2000 by

Figure 1.18 Investment volatility declines with income

(mean and standard deviation of volatility of investment)
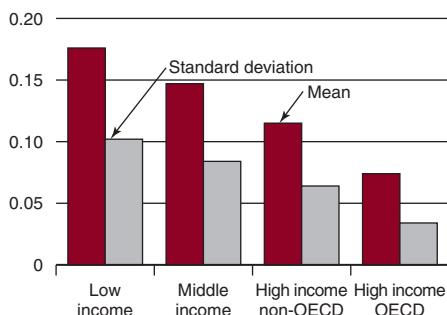
Note: Investment volatility is defined as the standard deviation of the deviation from (HP filtered) trend.
Source: World Bank staff estimates.

just 0.04 percent, but it would raise Senegal's investment by 11.5 percent. The effects on the two economies of such a decision would be disproportionate. Similarly, idiosyncratic shocks—economic, weather-related, or the reflection of civil strife—have a relatively large effect on smaller countries. Low levels of development and small size will tend to imply less diversification in the output and export mix but stronger dependence on commodity prices, so that poor countries' terms of trade will tend to be more volatile than those of OECD countries.

Improvements in the investment climate can reduce volatility

The quality of the *investment climate*, extensively discussed in the following chapters of this report, appears to be highly correlated with investment volatility. If one examines the investment climate, several candidates are available to proxy for this environment, all of which correlate highly with one another. Figure 1.19 is based on the quality of governance indicators compiled by Kaufmann, Kraay, and Zoido-Lobatón (2002), which have the advantage of comprehensiveness. Six subindexes attempt to capture various dimensions of policy and institutional quality. An unweighted average of all six is identified in the figure as "All." Meanwhile, two of the subcomponents seem especially pertinent to measuring the investment climate: "regulatory burden," which reflects the incidence of market friendly policies, and "rule of law," which measures respect for society's rules. "Regulation" consists of the first of these, while "Regulation and Law" is an average of the two. All three indexes show a similar pattern of declining volatility as the policy environment improves, suggesting the finding is robust.

One concern about the evidence presented in figure 1.19 is that all three indexes correlate very highly with income.[7] However, in regressions that explain volatility with both income and governance as explanatory variables, the coefficient for governance tends to be more significant than is the coefficient for income.

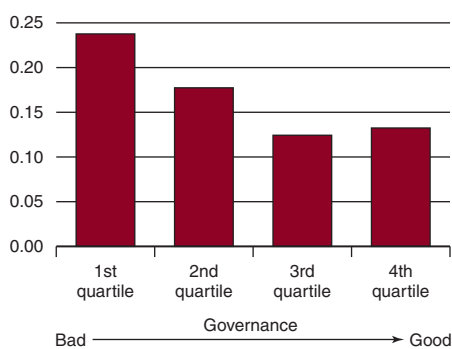**Figure 1.19 A better investment climate reduces volatility of investment cycles**

(standard deviation of cyclical component of investment)
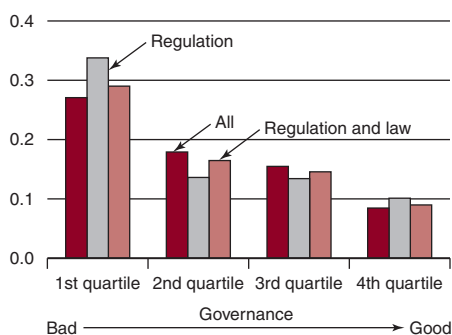
Source: World Bank staff estimates using governance indicators developed by Kaufmann, Kraay, and Zoido-Lobatón (2000).

Figure 1.20 Impact of policy climate on investment volatility after correcting for income remains strong

(standard deviation of cyclical component of investment)

Source: World Bank staff estimates using governance indicators developed by Kaufmann, Kraay, and Zoido-Lobatón (2000).

The independent effect of governance on volatility can be shown in a different way. Figure 1.20 repeats the analysis, but it corrects for the possible influence of income by first regressing the governance index on income and then examining the relationship between the volatility of investment cycles and the residuals

from this regression (that is, in relation to that part of the governance indicator that is not correlated with income). Investment volatility continues to fall with a better investment climate.

International net capital inflows are procyclical, both in developing and high-income countries—

Because investment cycles are more pronounced than output cycles, investment as a share of GDP tends to rise during a boom and to decline during a downturn. For countries at all income levels, financing of the increase in the investment ratio during a boom comes from both domestic and foreign sources. During an upturn, domestic savings rates normally build, while current accounts deteriorate (table 1.6). In other words, foreign investors turn away during downturns, while domestic consumers reduce their savings and increase their consumption as a share of income. Clearly, procyclical capital flows do not prevent consumers from absorbing shocks by smoothing consumption over time (box 1.4).

Table 1.6   Upturns can be financed abroad and domestically

Correlation of cyclical investment components with changes in …	Low income	Middle income	High income OECD
Current account (as % of GDP)	−0.21	−0.39	−0.43
Domestic savings (as % of GDP)	0.16	0.16	0.45

Note: The table shows unweighted averages of correlation coefficients of variables in individual countries.
Source: World Bank.

—but capital flows tend to trigger domestic cycles in middle-income countries

Both "push" and "pull" factors are responsible for the procyclical nature of capital inflows. In a downturn, demand for investment financing is reduced as firms postpone investment plans and reduce capital stocks (the pull factor). At the same time, financial investors look for less risky or risk-free investments and show little appetite to invest in countries and sectors that suffer from declining growth and profit rates (the push factor). For developing countries, the push factors have often been emphasized as a major challenge. Sharp increases in external finance frequently preceded severe crises (such as in Mexico, East Asia, and Turkey), which were triggered by sudden reversals of these flows. The dynamics of net capital inflows and the changes of official reserves over the cycle do indeed indicate that the push factor is more important for middle-income countries, while the pull factor dominates in high-income countries. Net foreign capital inflows actually lead the domestic investment cycle in middle-income countries, while they lag the cycle in high-income countries. For example, one-year-lagged capital inflows are correlated with investment by 0.27 in middle-income countries, compared with a correlation of only 0.08 for high-income countries. In middle-income countries, one-year-lagged capital inflows are as strongly correlated with the domestic investment cycle as they are with contemporaneous capital inflows (table 1.7). In high-income countries, a one-year lead in capital inflows is, by contrast, as strongly correlated

Table 1.7   Capital inflows lead investment in middle-income countries: correlation between investment ratios and (past or future) capital flows

	2-year lag	1-year lag	No lag or lead	1-year lead	2-year lead
Net capital inflows					
Low income	−0.09	0.09	0.21	0.07	−0.01
Middle income	0.13	0.27	0.35	0.10	−0.11
High income (OECD)	−0.20	0.08	0.32	0.35	0.25

Source: World Bank staff estimates.

Box 1.4 Consumption in low- and middle-income countries is smoothed over the business cycle

In all country groupings, the savings rate is positively (or the consumption rate is negatively) correlated with GDP growth in the short run (see box figure). The correlation is relatively weak for developing countries, but that weakness is mainly because GDP is an inaccurate measure of income in the presence of terms-of-trade shocks. Real growth of gross national income (GNI), which includes terms-of-trade gains and losses, is much more volatile than growth of real GDP in developing countries. In industrial, high-income countries, the terms of trade have a much smaller effect (see box table). The correlation between the savings rate and real growth of GNI is decisively more similar across countries.

The strong evidence of consumption smoothing in low- and middle-income countries is remarkable, because the conditions in such countries for absorb-

Relative and increasing vulnerability of low-, middle-, and high-income countries to terms-of-trade shocks

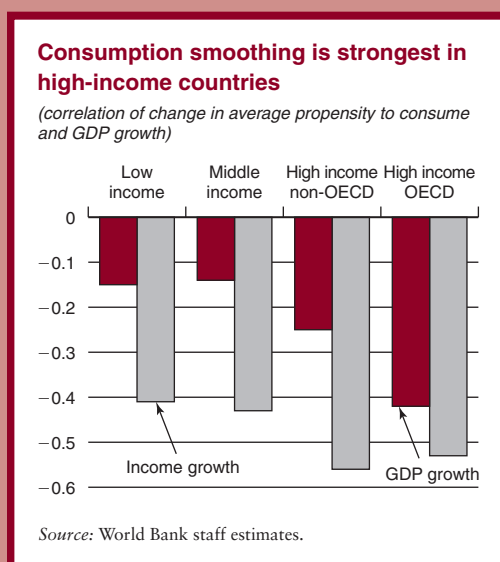|	1971–80	1981–90	1991–2000
Low income	2.1	2.2	2.8
Middle income	1.9	1.8	2.2
High income (non-OECD)	2.8	1.5	1.5
High income (OECD)	1.4	1.3	1.3

Note: Standard deviation of national income growth/standard deviation of GDP growth.
Source: World Bank data.

ing fluctuations in income are less favorable than in high-income countries. First, domestic credit markets tend to function less smoothly, and access to international capital markets is more difficult than in high-income countries. Second, as far as fluctuations in income are caused by terms-of-trade shocks, the smoothing of consumption over time is less attractive than in the case of volume shocks, which prevail in high-income countries. If, for example, import prices fall, the decline in price amounts to a rise in income, which could trigger an increase in the savings rate. However, a temporary price fall implies a future price rise, making future spending of current savings less attractive. In the case of a temporary rise in the volume of income, it is more appealing to save now and spend later, when income is back at a lower level.

Despite these impediments, developing countries' consumption is being smoothed over the business cycle, providing relief for consumers and supporting domestic financing of procyclical investment ratios.

Consumption smoothing is strongest in high-income countries

(correlation of change in average propensity to consume and GDP growth)

Source: World Bank staff estimates.

Source: World Bank staff.

with the domestic investment cycle as with contemporaneous capital inflows.

The picture of capital inflows being a push factor for middle-income countries is strengthened when one considers the behavior of

official reserves. Some of the foreign capital inflow that precedes a domestic investment boom in middle-income countries is temporarily accumulated as foreign reserves, while capital outflows that precede a domestic bust are

temporarily absorbed by reductions in official foreign exchange reserves.

In low-income countries, capital inflows are also procyclical, but the correlation with the domestic cycle is less significant. The weaker correlation reflects the specific character of these flows—official aid and FDI are less cyclical—and also the dependence of those countries on commodity prices. Part of the financing for investment booms comes not from foreign borrowing, but from increased export revenues as a result of terms-of-trade gains. Similarly, investment busts are not necessarily driven by a reversal of capital flows, but they can originate from terms-of-trade losses.

On the basis of these relationships, it appears that cycles are still a prominent feature of macroeconomic developments, which is even more important in developing countries than in industrial countries, and cycles were more pronounced during the 1990s than during earlier decades. Investment swings are financed both domestically and abroad, which makes current account deficits and capital inflows strongly procyclical. A major difference between developing countries and high-income countries is that middle-income countries are more exposed to independent reversals in capital flows, while capital flows are more accommodating in high-income countries, and the cyclical dynamics in low-income countries are to a significant extent influenced by terms-of-trade shocks and idiosyncratic disturbances.

Growth and poverty to 2015: coming changes in savings and investment patterns

After an impressive wave of market reforms and increased openness in developing countries during the 1990s—both of which prompted acceleration of technological progress and brought about a more stable macroeconomic environment—long-term economic growth prospects for developing countries are relatively optimistic. If the projections come to pass, growth patterns could lead to a significant reduction of poverty. Thus, the millennium development goal of halving poverty by 2015 could be reached on a global level, although growth will be insufficient to achieve poverty targets in all regions. At the same time, financial imbalances and volatility in international capital flows continue to jeopardize uninterrupted growth. Vulnerable countries will benefit from further debt reduction in their pursuit of sustained high growth.

The acceleration of growth in developing countries is expected to coincide with increases in investment ratios. Saving rates are also expected to increase, driven particularly by a declining proportion of youths and by the need for adults to save for retirement. Opposite movements are expected in industrial countries, where aging is bound to reduce savings rates and where a sharp decline in population growth will suppress investment ratios.

The long-term forecast suggests that, on balance, net inward capital flows toward developing countries could well decline, though gross flows will continue to play an important role in enhancing growth potential. These changes in global savings and investment behavior raise questions about the critical role of financial integration and the need for improvements in international financial intermediation.

Long-run per capita growth is expected to accelerate—

Developing-country growth, on a per capita basis, is projected to more than double during the 10-year period from 2005 to 2015 when compared with the performance of the 1990s (table 1.8). This projection reflects substantially improved growth prospects for Europe and Central Asia—leaving behind sharp contractions that characterized the transition to market economies during the 1990s—and for Sub-Saharan Africa. For Africa, the scenario is predicated as a continuation of broad trends toward better governance and economic policies, of progress toward resolving conflicts and diversification away from agriculture, and of export dependence on primary commodities.

Table 1.8   Long-term prospects are projected to be stronger for most regions

(real GDP per capita, annual average percentage change)

| | | | Forecast scenario | |
| | | | Medium term | Long term |
	1980s	1990s	2001–05	2006–15
World total	1.3	1.2	1.1	2.1
High-income countries	2.5	1.8	1.5	2.4
OECD	2.5	1.8	1.5	2.4
United States	2.2	2.2	1.6	2.4
Japan	3.5	1.2	0.4	2.0
European Union	2.1	1.7	1.9	2.4
Non-OECD countries	3.3	3.6	1.7	3.3
Developing countries	0.7	1.6	2.4	3.5
East Asia and the Pacific	5.6	6.4	5.1	5.4
Europe and Central Asia	0.7	–1.9	3.3	3.4
Latin America and the Caribbean	–0.9	1.6	0.3	2.6
Middle East and North Africa	–0.6	1.0	1.3	1.3
South Asia	3.4	3.3	3.5	4.0
Sub-Saharan Africa	–1.2	–0.4	0.8	1.6

Note: Aggregations are moving averages, reweighted annually after calculations of growth in constant prices.
Source: World Bank.

At the same time, a lack of human capital, poor infrastructure, and the AIDS epidemic remain pressing problems.

Per capita growth in Latin America is expected to accelerate by 1 percentage point under this scenario, but as a result of slowing population growth, the acceleration of real GDP growth is small. Latin American countries are expected to have benefited from reform efforts during recent years and from sustained improvements in macroeconomic stability. The East Asia and Pacific Region should witness a declining per capita growth rate from 6.4 percent in the 1990s to 5.4 percent in the longer term, as economies mature and as options for rapid catching up become less abundant. Per capita growth in the rest of the world, including South Asia, the Middle East and North Africa, and high-income countries, is projected to accelerate moderately.

—leading toward significant poverty reduction

As projected in previous *Global Economic Prospects (GEP),* achieving the millennium development goal of halving extreme poverty by 2015 from the 1990 poverty level should be achieved on a global level, though with wide regional disparities. The revised poverty projections indicate a poverty rate of some 13.3 percent in 2015 compared with 29.6 percent in 1990. The actual number of poor would decline to around 809 million from 1.3 billion in 1990 and 1.1 billion in 1999. Asia should readily achieve the target, but the MENA and SSA regions will make little progress in improving poverty incidence (table 1.9).

Though the central message remains the same, the long-term outlook reflects rather significant changes from last year's forecasts. These changes are a combination of three factors:

- The economic projections reflect recent trends and a downgrading of the medium-term forecast, as detailed earlier in the chapter, page 5. The long-term forecast has remained relatively unchanged, but lower growth—actual and forecast—between 2000 and 2005 has slightly

worsened the poverty forecast, all else being equal.

- New surveys and methodology have significantly altered the 1999 estimate of poverty incidence. For developing countries, this change has led to a 1.6 percent rise in the estimate of the number of poor living on less than $1 per day. However, the revisions are not uniform across regions. There is a significant rise in East Asia and in Europe and Central Asia, while the estimated number of poor has dropped in Latin America.[8]
- The third factor is the change in the relation between economic growth and poverty reduction. This relation has been re-estimated using the new survey data. Overall, the relationship has weakened

(that is, for the same growth rate, the rate of poverty reduction has declined).

The reader should bear in mind that these numbers are sensitive to the poverty line chosen and underlying assumptions and data (see box 1.5).

The relation between growth and poverty may not have changed in a fundamental way, but the change may be a consequence of past trends at a more disaggregated level. Recent studies[9] of poverty trends in India indicate that poverty has been successfully reduced in a number of states in which growth rates are high and in which the responsiveness of poverty reduction to growth is likewise higher. Moreover, the evidence suggests that these regions had significantly better initial conditions

Table 1.9   Large poverty reductions in EAP and SAR partially offset by poverty increases in SSA

| | Number of people living on less than $1 per day (millions) | | | | | |
| | GEP 2002 | | | GEP 2003 | | |
Region	1990	1999	2015	1990	1999	2015
East Asia and Pacific	452	260	59	486	279	80
Excluding China	92	46	6	110	57	7
Europe and Central Asia	7	17	4	6	24	7
Latin America and the Caribbean	74	77	60	48	57	47
Middle East and North Africa	6	7	6	5	6	8
South Asia	495	490	279	506	488	264
Sub-Saharan Africa	242	300	345	241	315	404
Total	1,276	1,151	753	1,292	1,169	809
Excluding China	916	937	700	917	945	735

| | $1 per day headcount index (percent) | | | | | |
| | GEP 2002 | | | GEP 2003 | | |
Region	1990	1999	2015	1990	1999	2015
East Asia and Pacific	27.6	14.2	2.8	30.5	15.6	3.9
Excluding China	18.5	7.9	0.9	24.2	10.6	1.1
Europe and Central Asia	1.6	3.6	0.8	1.4	5.1	1.4
Latin America and the Caribbean	16.8	15.1	9.7	11.0	11.1	7.5
Middle East and North Africa	2.4	2.3	1.5	2.1	2.2	2.1
South Asia	44.0	36.9	16.7	45.0	36.6	15.7
Sub-Saharan Africa	47.7	46.7	39.3	47.4	49.0	46.0
Total	29.0	22.7	12.3	29.6	23.2	13.3
Excluding China	28.1	24.5	14.8	28.5	25.0	15.7

Table 1.9 (continued)

| | Number of people living on less than $2 per day (millions) | | | | | |
| | GEP 2002 | | | GEP 2003 | | |
Region	1990	1999	2015	1990	1999	2015
East Asia and Pacific	1,084	849	284	1,114	897	339
Excluding China	285	236	93	295	269	120
Europe and Central Asia	44	91	42	31	97	45
Latin America and the Caribbean	167	168	146	121	132	117
Middle East and North Africa	59	87	65	50	68	62
South Asia	976	1,098	1,098	1,010	1,128	1,139
Sub-Saharan Africa	388	484	597	386	480	618
Total	2,718	2,777	2,232	2,712	2,802	2,320
Excluding China	1,919	2,164	2,041	1,892	2,173	2,101

| | $2 per day headcount index (percent) | | | | | |
| | GEP 2002 | | | GEP 2003 | | |
Region	1990	1999	2015	1990	1999	2015
East Asia and Pacific	66.1	46.2	13.5	69.7	50.1	16.6
Excluding China	57.3	40.4	13.3	64.9	50.2	18.4
Europe and Central Asia	9.6	19.3	8.7	6.8	20.3	9.3
Latin America and the Caribbean	38.1	33.1	23.4	27.6	26.0	18.9
Middle East and North Africa	24.8	29.9	16.7	21.0	23.3	16.0
South Asia	86.8	82.6	65.5	89.8	84.8	68.0
Sub-Saharan Africa	76.4	75.3	68.0	76.0	74.7	70.4
Total	61.7	54.7	36.3	62.1	55.6	38.1
Excluding China	58.8	56.5	41.0	58.7	57.5	44.7

Note: The GEP 2002 figures include the Republic of Korea, which has been reclassified into the high-income group.
Source: World Bank staff estimates.

Box 1.5   Is the World Bank overestimating global poverty?

A recent study (Bhalla 2002) concludes that the World Bank has overestimated the number of poor in developing countries, and that the millennium development goal of halving extreme poverty by 2015 (from its 1990 level) was already achieved in 2000. The study estimates that the percentage of poor in developing countries in 2000 was only 13.1 percent and that the World Bank's estimate is 10 percentage points higher (see table 1.9). Three differences between the Bhalla estimates and the World Bank's explain Bhalla's different conclusion. These differences include the choice of the poverty line, his use of secondary data sources rather than primary surveys, and consumption adjustments. These differences highlight the complexity in counting the number of poor and are described here. A more complete critique of the Bhalla study can be found in a separate paper (Ravallion 2002).

The World Bank has chosen to use $1 per day and $2 per day poverty lines for global estimations, roughly spanning the range of national poverty lines in developing countries. Bhalla uses $1.50 per day. Because the cost of purchasing 2,200 calories differs from country to country, each country estimates its

Box 1.5 *(continued)*

own national poverty line. This approach also reflects the fact that the nature of poverty varies significantly across and within countries. Moreover, poverty has many dimensions: inadequate consumption of essential commodities, as well as low life expectancy, high child mortality, and low school enrollment rates, among other attributes related to the quality of life. Poverty is also a relative and subjective concept. What is deemed a necessity in some countries (for example, indoor plumbing in rich countries) may be a luxury in others. In Latin America, the regional estimate for the percentage of people living in extreme poverty is 17.8 percent in 1998 (Wodon and others 2002), compared with 11.1 percent in 1999 using the $1 per day poverty line. The former is based on national poverty lines and is from a regional perspective. This higher number—arguably a more accurate reflection of the incidence of poverty from a social point of view—is more relevant in determining policies for reducing poverty. However, for purposes of global comparisons, the World Bank has tried to select a level of real consumption that best measures the same level of consumption across countries so it can make aggregate judgments independent of where the poor live.

Unlike the Bhalla study—which relies on aggregate secondary data sources—the World Bank's poverty estimates rely exclusively on primary data from comprehensive household surveys. Since the 1980s, the World Bank and developing-country governments have been actively involved in undertaking national household surveys to get an accurate picture of the distribution of consumption across individuals. To date, more than 300 comprehensive surveys have been collated and used to estimate the number of poor. Currently, the surveys cover more than 90 countries, with surveys available for various years for most counties. The surveys used all have national coverage. They include consumption from own-production—a key feature in many developing

countries—and the calculations are properly weighted to reflect survey design and differences in household size. Consumption is deemed to be the preferred measure to income, but income is used when consumption is not available.

Finally, Bhalla's study makes consumption adjustments, which may not be warranted and could lead to a biased poverty estimate. The headcount index (that is, the percentage of the population living at or below the poverty line) is calculated using an estimate of the per capita consumption level relative to the poverty line. There can be significant discrepancies between the survey-based mean consumption and the mean consumption as measured by the national accounts. Part of this discrepancy is explained by the way consumption is estimated in the national accounts (which typically includes consumption of non-household private agents such as nonprofit organizations). Other discrepancies can arise from measurement error (for example, misreporting of consumption in surveys). Adjustments for these discrepancies can lead to different estimates of poverty. If, for example, the misreporting is biased toward high incomes—that is, if only rich households underreport consumption in the surveys—and if an upward adjustment is applied to all households (including the poorest), then the number of poor will clearly be underestimated (see Ravallion 2002). The World Bank's poverty estimates rely on the survey-based consumption levels.

Transparency in the methodology and data used to assess the level of poverty is critical in this debate regarding how to count the number of poor. The ability of different researchers to easily assess and compare results will lead to improved estimates and to a better understanding of the nature of poverty and policies that accelerate poverty reduction.

Source: World Bank staff.

than did states with lower growth rates. This evidence implies that progress in the future will be harder to achieve with the same national growth rate. Poverty-reducing policies will, therefore, have to focus on raising the

initial conditions in the laggard states and should not rely exclusively on raising the national growth rate.

The number of poor in last year's report was projected to be 753 million in 2015,

or a headcount rate of 12.3 percent. The current forecast shows the number of poor will decline to only 809 million by 2015, or a headcount rate of 13.3 percent. This change represents a 7.4 percent increase when compared with last year's figure. The percentage increase can be decomposed into two factors. The higher initial level of the number of poor in 1999 would lead to an increase of 2.3 percent in the 2015 forecast, all else being equal. The remaining 5.1 percent of the increase in the forecast is attributed to a weakening of the relation between growth and poverty.

Population, savings, and investment are factors underlying the long-term forecast

Some developing regions will need to see a reversal in performance of underlying growth factors—particularly in productivity and in savings and investment—from the last decade. That reversal should show either changes to policies or persistence with ongoing reforms. Assessing the factors underlying the long-term forecast—population and labor supply, technological progress, and savings and investment—will elucidate some of the underlying dynamics in the long-term growth forecast and its policy implications.

### Population growth will ease in all regions—

In virtually all countries, growth of the working-age population is slated to decline over the next 15-year period, thereby affecting labor supply and thus contributing less to GDP growth in the long run (figure 1.21). High-income countries and those in Europe and Central Asia are likely to see an absolute drop in the working-age population by 2015. Developing regions will see a slower pace of decline, although East Asia is expected to see its growth rate halved to 0.7 percent per year by the end of the period.[10] A slower growth rate in the labor force means that achieving the same rate of per capita growth will require an acceleration of investment, a higher level of productivity, or a combination of both.

—but technological progress should accelerate

The role of total factor productivity (TFP) growth in determining growth rates has been the subject of significant research over the past decade (see box 1.6), but there is a growing consensus that technological advances and efficiency improvements are pivotal determinants of growth patterns. If one looks forward, many countries are expected to reap the

Figure 1.21 Growth of working-age population decelerates

(annual growth of population for ages 15 to 65)
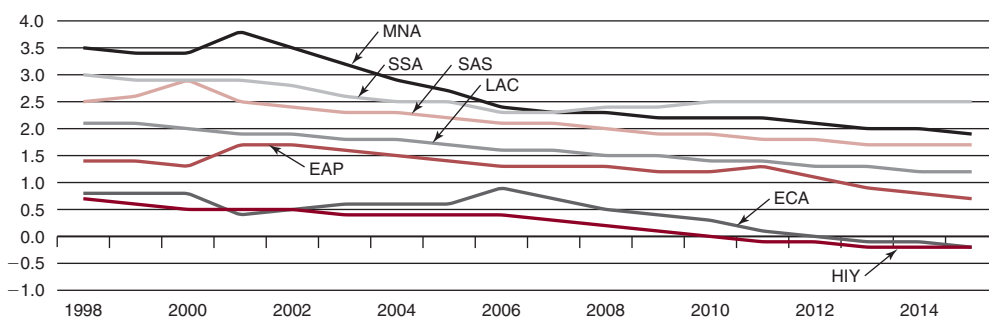
Note: HIY refers to high-income countries; SSA refers to Sub-Saharan Africa; EAP refers to East Asia and Pacific; SAS refers to South Asia; ECA refers to Eastern Europe and Central Asia; MNA refers to Middle East and North Africa; LAC refers to Latin America and the Caribbean.

Source: World Bank staff demographic projections.

Box 1.6   Technological progress is an important determinant of growth

A growing consensus in the economic literature is that TFP accounts for the bulk of cross-country differences in the level of income and the rate of GDP growth (Easterly and Levine 2001).[11] Whether TFP or capital and labor accounted for the bulk of income differences among countries has been an issue of dispute since seminal articles by Denison (1972) and Jorgenson and Griliches (1967, 1972). The debate sharpened in the 1990s when a number of comparative growth studies found that the success of the East Asian Tigers was driven mostly by increases in capital and labor rather than by increases in TFP (Young 1992, 1995; Collins and Bosworth 1996). Because capital is subject to diminishing returns, such studies implied that the high rates of growth achieved in East Asia were not sustainable (Krugman 1994).

More recently, the weight of evidence appears to be moving toward the conclusion that TFP is the main driver of growth. The East Asian studies have been criticized for not accounting for the role that technological progress plays in encouraging greater capital accumulation (Hulten 2000; Barro and Sala-i-Martin 1992).[12] Nelson and Pack (1999) emphasize that learning, technology absorption, and forceful entrepreneurship were critical to the success of large investments in physical and human capital. Klenow and Rodríguez-Clare (1997) estimate that TFP made an important contribution to growth in all of the East Asian "miracle" economies, except Singapore. Easterly and Levine (2001) summarize studies that show TFP accounts for more than 40 percent of output growth in most of the industrial countries, 30 percent or more in most Latin American countries, and a wide range (from −5 percent to 30 percent) in East Asia (box figure). Some writers attempt to refine estimates of the contribution of TFP to growth by incorporating some measurement of the quality of inputs—for example, adjusting data on labor input for the degree of education or training (see Easterly and Levine 2001 and Parente and Prescott 2000 for recent contributions). In general, efforts have not been successful in greatly reducing the amount of growth or income differences that are accounted for by TFP.

The evidence that growth in TFP is the main driver of economic growth is essentially an optimistic sign for developing countries, because constraints on domestic resources and access to external financing severely limit a country's ability to raise growth rates by increasing the volume or improving the quality of physical and human capital. To the extent that differences in TFP growth will reflect differences in technology, then developing countries (which are well below the technological frontier) can potentially achieve high "catch-up" rates of growth by importing technology. Parente and Prescott (1994) see the main source of cross-country productivity differences as stemming from policy-induced barriers to adopting advanced technology. TFP growth also reflects other aspects of economic efficiency that are amenable to change through improving policies. For example, policies that increase competition may raise TFP by improving the allocation of labor and capital and by increasing the ability of the economy to respond to changes in the economic environment (Easterly and Levine 2001; Solow 2001; Hulten 2000).

Critiques of using this accounting approach include the fact that it typically relies on various restrictive assumptions (for example, constant returns to scale and competitive markets) that may not hold in reality (although models that incorporate

TFP is a major contributor to growth

(percent)
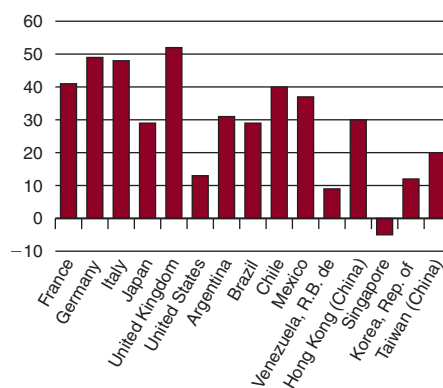
Source: Easterly and Levine (2001).

Box 1.6   *(continued)*

market imperfections also confront difficult econo-metric problems; see Brock and Durlauf 2001). Often, key parameters, such as the share of capital in output, are assumed to be based on limited empirical work (Senhadji 2000). Solow (2001) notes that the growth-accounting framework assumes that the economy is moving along the potential output frontier. In developing countries, the volatility of the business cycle means that actual output may be considerably different from potential at any point in time. Thus, growth-accounting estimates using time series data may be biased by differences between potential and actual output levels at the beginning and end points, even if a considerable time period is covered. Finally, growth accounting generally does not reflect either improvements in the quality of goods or the introduction of new products, which are also important for welfare (Hulten 2000). Those criticisms underscore the substantial methodological and measurement difficulties involved in quantifying the contribution of inputs and productivity to growth rates. Nevertheless, as Hulten (2000) stresses, this approach has provided a simple and internally consistent intellectual framework that has been used to gain vital insights into the process of economic growth.

—————————

Source: World Bank staff.

Figure 1.22 Productivity has not been the dominant source of growth in regions

(average percent per annum 1990–2000)
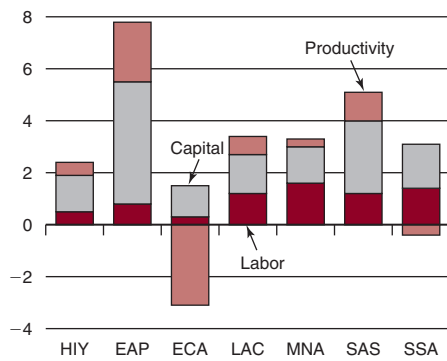
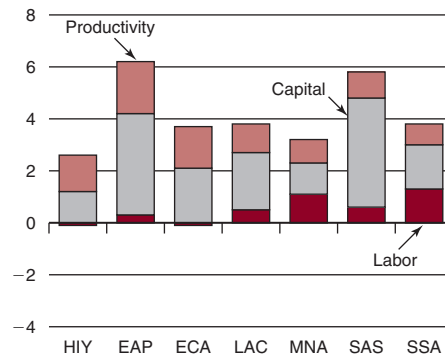HIY = high-income countries.
Source: World Bank staff estimates.

benefit of reforms undertaken during the past 10 years. These benefits will likely show up as an acceleration of technological progress (figures 1.22 and 1.23). Among industrial countries, those countries in Europe will see accelerating benefits from the single currency plus greater capital and labor mobility. Japan, though still burdened with significant problems in its financial sector, is witnessing changes in its service sectors, which will have long-term payoffs. Both Europe and Japan, although lagging somewhat behind the United States, have the opportunity to reap gains from improved use of information technologies.

The East Asia region has been the leader among developing regions in terms of accelerating productivity over the past two decades. It has built on compositional shifts (from agriculture to manufacturing and services),

Figure 1.23 Productivity is expected to be more significant in the longer term

(average percent per annum 2005–15)

HIY = high-income countries.
Source: World Bank staff estimates.

educational improvements, and productivity-enhancing policies (for example, increasing openness). The region will continue to benefit from good policies and compositional shifts. After all, the largest country in the region, China, still has more than 60 percent of its work force in agriculture. However, as the gap with technologically more advanced countries closes, the opportunities for extreme advances in productivity diminish.

Europe and Central Asia is benefiting from the substantial reforms of the 1990s, accompanied by large FDI flows. Moreover, many of the accession countries will accelerate the reform process in preparation for joining the EU early in the forecast period.

In Latin America, progress has been visible regionwide. As has been positively demonstrated by Chile and Mexico, openness and stability are key elements in providing sustainable growth. A recent study of Latin American growth over the past three decades concludes that structural reforms and stabilization policies accounted for a large contribution to the overall acceleration in the rate of growth in the 1990s compared with the "lost decade" of the 1980s.[13] These trends are expected to continue in the next decade, with increasing investments in infrastructure and education and with greater openness to trade underpinning solid productivity growth. The key downside risk includes the vulnerability of the region to external shocks, particularly given its sizable external debt burden, and the effects that this debt could have on the stability of the domestic financial sector.

Sub-Saharan Africa has benefited from similar policy reforms and stabilization. FDI has been increasing, and the resolution of some long-term civil conflicts should provide a more enabling environment for sustained growth. South Asia and the Middle East and North Africa regions have maintained some of the highest trade barriers in the world. These barriers will slowly be removed under the impetus of multilateral and regional trade agreements, with ensuing efficiency gains.

Figures 1.22 and 1.23 summarize the decomposition of the various sources of GDP growth into three broad components: the labor supply, capital accumulation and productivity for the historical period 1990–2000, and the long-term projection for 2005–15. The decomposition profiles projected for the period 2005–15 are rather similar to the 1990–2000 period, with the significant exception of the contribution from technological progress. As argued on page 38, we have projected that most regions will see an acceleration of technological progress, which will drive the improvements in GDP growth. That progress will trigger further capital accumulation to accommodate and to further enhance growth prospects—hence the need for providing an enabling investment environment. Capital accumulation implies an investment profile—discussed in more detail below—linked, of course, to behavioral assumptions regarding savings during the coming decade.

Convergence of investment ratios is likely to continue

After a distinct divergence of investment ratios across regions during the past decades, some convergence is expected during coming decades, though disparities will remain significant. Investment rates in the developing East Asia and the Pacific region gradually increased from 15 percent of GDP during the 1960s to almost 30 percent during the 1980s (figure 1.24a). This increase coincided with rapid growth of the economies in the region, major sectoral shifts as a result of diversification, and regional and global integration, which all required expansion or replacement of capital stocks. During the first half of the 1990s, the average investment rate jumped further to 35 percent, of which a substantial part was used for real estate development when foreign capital streamed in. In 1997, investors realized that their collective behavior was based on overly optimistic expectations. The resulting financial crisis sharply lowered investment rates back to levels near 25 percent.

The investment rate in South Asia was extremely low until the mid-1970s, but then it started to rise. To a large extent, that rise is a reflection of the green revolution and industrialization programs in India. Although not as strong by far as in East Asia, the average rate continued to increase during the 1980s and 1990s, and the current level is now close to OECD levels of around 22–23 percent. That level is well above rates in Latin America and Sub-Saharan Africa.

Structural developments in the latter two regions (LAC and SSA) were quite different from the Asian experience. A gradual rise in investment rates during the 1970s, which was partly financed abroad, suddenly turned into a sharp decline when the debt crisis hit in the early 1980s. Investment rates dropped around 5 percentage points. Macroeconomic imbalances and hyperinflation in Latin America, as well as sharp terms-of-trade losses in Africa, led to extremely low growth during the 1980s. In this environment, investment rates continued to fluctuate around historical lows. During the 1990s, investment rates showed only a slight recovery, although the composition shifted significantly away from public to private investment, following major structural changes and privatization programs. One reason for the lack of a strong rebound in investment was the continued low domestic savings rate in both regions (figure 1.24b). Even with low investment rates, the current account showed large deficits during the 1990s.

Future investment trends will be influenced by expected GDP growth, by real domestic interest rates, and by expected domestic rates of return to capital compared with the average global rate of return. If one assumes a stable risk environment, the last effect should tend to benefit developing countries, where rates of return are higher than in rich counties. Table 1.10 summarizes the changes in investment behavior between the average of the 1997–2001 period and the final year (2015) of the baseline scenario. On average, the high-income countries will see a drop in the investment rate of about 2.9 percentage points (relative to GDP). This figure is derived largely from lower projected GDP growth rates and thus changes in the optimal capital to output ratio. The average investment rate in developing countries increases slightly by 0.2 percentage points, with higher investment rates in many regions offset by lower investment in East Asia. The latter region is still suffering

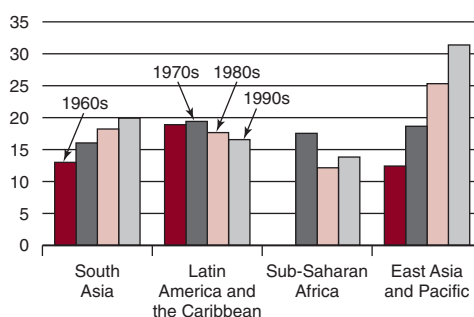**Figure 1.24 Major structural shifts in investment and savings behavior have occurred**

a. Investment-to-GDP ratio

(current dollar-weighted average)
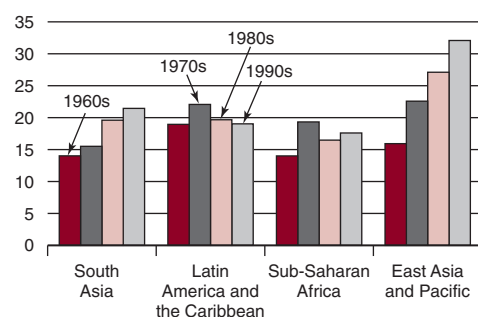
b. Savings-to-GDP ratio

(current dollar-weighted average)

Source: World Bank staff estimates.

Table 1.10 Savings fall in high-income countries, but increase in most other regions
(as a percentage of GDP)

	1997–2001			2015		
	Savings (S)	Investment (I)	Capital inflows (KA)	Savings (S)	Investment (I)	Capital inflows (KA)
Total	22.4	22.5	0.1	20.5	20.5	0.0
High income	22.0	21.9	−0.1	18.6	19.0	0.4
Low and middle income	24.2	24.7	0.5	26.0	24.9	−1.1
European Union	20.8	20.4	−0.4	17.5	17.4	−0.1
Japan	29.8	27.5	−2.2	26.0	25.4	−0.6
United States	17.5	19.5	2.0	14.5	16.3	1.9
Rest of high income	30.8	26.1	−4.7	24.9	23.2	−1.7
East Asia and Pacific	36.9	33.9	−3.0	35.0	29.3	−5.8
South Asia	21.3	22.2	0.9	23.7	23.5	−0.2
Middle East and North Africa	26.2	21.4	−4.8	23.1	22.2	−0.9
Sub-Saharan Africa	13.9	17.6	3.7	19.0	20.1	1.1
Europe and Central Asia	21.9	22.6	0.7	22.0	27.1	5.1
Latin America and the Caribbean	17.9	21.7	3.7	20.5	20.6	0.0

Note: The columns (S), (I), and (KA) represent, respectively, the national saving rate, the national investment rate, and the capital account, all as a share of GDP. The values for 2015 are simulated values from the global general equilibrium model (maintained by the Development Economics Prospects Group). The values for the 1997–2001 period represent the average observed values from the World Bank's statistical databases. For the high-income countries, these values are the 1997–99 or 1997–2000 averages, depending on data availability. For the totals, the averages cover only the years 1997–99.
Source: World Bank model simulations.

from past overinvestment, particularly in some sectors, and will adjust its investment needs to a slight deceleration in growth. Most of the other developing regions will see acceleration in investment in anticipation of higher growth. Investment in those regions will also provide relatively higher returns than in the more mature economies.

Future changes in investment rates do not necessarily lead to corresponding changes in current accounts. Despite capital mobility, investment rates tend not to correlate with current account deficits in the long run, the so-called Feldstein-Horioka puzzle (1980). Also in the coming 15-year period, the savings rate is expected to increase in those countries that are anticipated to enjoy an acceleration of growth, partly because of rapidly changing demographics.

Changing demographics will raise savings in developing countries and will lower savings in industrial countries

Global population dynamics are evolving fairly rapidly at the beginning of the new mil-
lennium. Rich countries are seeing an extension of life spans and a rapid decline in birthrates, leading to a sharply aging population. Developing countries are witnessing a relatively sharp drop in the percentage of youths as well as modest increases in the number of elderly. Recent economic evidence suggests that these trends could have significant implications on national saving rates—lowering them in rich countries because of aging, but raising them in developing countries as workers save for future retirement. Lower birthrates also lead to a reduction in resource demand for the young.

The demographic transition with respect to the proportion of youths is largely over in the high-income countries (figure 1.25). The overall average was 27.4 youths per 100 workers[14] in 2000 and is expected to drop to 24.4 by 2015. Developing regions are likely to witness much greater changes. First of all, the proportion of youths is starting from a significantly higher base, with the dependency ratio averaging 51.0, which is nearly double the high-income average. The ratio is expected to drop to 40.7 by 2015, twice the percentage of the

Figure 1.25 Youth dependency ratio will fall everywhere except Japan

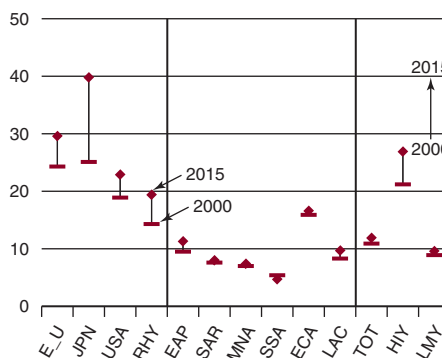*(number of youths, age 15 and under, per 100 working-age population)*
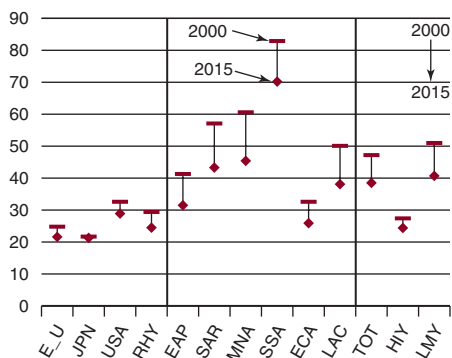
RHY = rest of high income; TOT = global average; HIY = high-income average; LMY = low- and middle-income average.
Note: Working-age population is defined as those people between the ages of 15 to 65.
Source: World Bank staff.

Figure 1.26 Elderly dependency ratios will rise in some regions

(number of elderly, age over 60, per 100 working-age population)

RHY = rest of high income; TOT = global average; HIY = high-income average; LMY = low- and middle-income average.
Note: Working-age population is defined as those people between the ages of 15 to 65.
Source: World Bank staff.

fall expected in industrial countries. This anticipated decline is the consequence of two factors: a boom in births over the past two decades, leading to a rapid rise in the working-age population, and, more recently, declining birthrates, which are caused by a combination of economic growth and family-planning programs.

The elderly dependency ratio, defined as number of members of the population who are older than 65 per 100 workers, is rising in almost every region (figure 1.26). The transition is occurring rapidly in industrial countries as the Baby Boom generation ages and as life expectancy improves, but there will only be modest changes in developing countries through 2015 because relatively more recent improvements in health and life expectancy will affect elderly demographics only further in the future.[15] The elderly dependency ratio average in 2000 for industrial countries was 21.2 per 100 workers. It is expected to rise to 26.9 by 2015, surpassing the youth dependency ratio. Japan will witness the most dramatic increase, from 25.1 to 39.8. This change

alone could have major macroeconomic implications for Japan and have consequences for the rest of the world, because Japan has long had large excess savings that have been recycled abroad. Outside the industrial countries, the average elderly dependency ratio is not expected to change significantly. The average was 8.9 in 2000, increasing to only 9.6 in 2015.

Several recent studies of private savings behavior have linked the private savings rate to a number of different factors: demographics, income levels and growth, interest and inflation rates, and degree of financial intermediation.[16] The results discussed next focus on only three channels affecting savings: the rate of per capita GDP growth, the youth dependency ratio, and the elderly dependency ratio. Other channels may prove to be equally important, however, such as improved financial intermediation and a stable macroeconomic environment. Combining these three effects suggests that global savings may decline by around 1 percentage point over the longer term, a figure that takes into account a

2.7 percentage point decline in high-income countries and a 3.7 percentage point rise in developing countries.

With relatively large swings in domestic savings rates, the scenario suggests a rather significant change in net capital flows. In 1997, the base year of model simulations, industrial countries were exporting around $67 billion in net investment to low- and middle-income countries, some 1.1 percent of low- and middle-income countries' GDP. East Asia was the only developing region that was a net exporter of capital in the base year.[17] By 2015, under these savings and investment assumptions, low- and middle-income countries would be significant net exporters (some 1.1 percent of their GDP), while industrial countries would be net importers. Among industrial countries, Europe would be in approximate investment-to-savings balance, but the United States could continue to be a significant net importer of capital. The United States would actually see little change in its capital account surplus from the base year (as a share of GDP), though it would experience a reversal from its present high level. Japan's capital account deficit would diminish sharply with a rapidly increasing elderly population leading to a decrease in savings.[18]

The actual magnitude of these changes in savings and investment rates remains speculative—even though they are grounded in empirically validated economic theory within a consistent accounting framework—because some of the underlying behavioral relations could change the savings rates, the investment rates, or both to some extent and could have a noticeable effect on the balance (that is, the capital account). Nevertheless, there is little doubt regarding the broad changes in the pattern in these projections. A clear trend emerges of further reduction in developing countries' foreign debt. East Asia could continue to show significant surpluses on the current account, while Latin America could converge toward a balanced current account. The latter would be the result of, and represent a rise in, the savings rate and a relatively stable investment ratio. Those figures would reflect no change in overall growth compared with the 1990s because declining population growth will counteract the acceleration in per capita growth.[19] These trends in savings and investment rates will require adjustments to relieve the strains on budget and other variables. Open capital and goods markets would facilitate the potential strains from demographic transition.

Major policy challenges are likely to emerge

While there is evidence in support of the economic growth projection in this long-run scenario, the degree of uncertainty regarding the projections is high. There is recognition that these trends will require good policies, because many developing countries are still subject to major shocks.

These scenarios raise important long-term policy issues. First, the changing savings and investment patterns will have consequences for net capital flows. Several developing countries that in past decades have relied on net capital inflows will find it harder to do so in the coming 15 years. Indeed, the recent shift from debt accumulation to debt reduction in many of these countries is likely to herald a new long-term trend of further declines in debt. If the expected increase in private domestic savings is accompanied by further maturing of domestic credit markets and is not thwarted by deterioration of public savings, then debt reduction will not conflict with the investment patterns needed to underpin growth.

Underlying large swings in net capital flows are even larger movements of gross capital flows, because FDI expands into growing markets in developing countries and because financial agents in developing countries seek to diversify their portfolios in rich countries. These capital movements will require further international financial integration. Because the history of financial integration has not been entirely felicitous—and at times has been damaging to growth and poverty reduction—

the international community and developing countries have had to search for mechanisms to provide for greater stability in integration.

Developing countries can further facilitate potential growth by improving their investment climates. A sound policy environment will trigger investment flows and, more important, will ensure that these flows go into internationally competitive activities. A sound investment climate in developing countries can also attract FDI, which is a form of less-volatile capital inflow.

Notes

1. Examples of investment-grade borrowing countries are Chile, China, the Republic of Korea, Malaysia, Mexico, Thailand, and several Central European countries.

2. See Appendix 1, "Regional Economic Prospects," for detail on recent developments, policy, and prospects for developing regions.

3. Simulation used the world model by Oxford Economic Forecasting Inc.

4. Investment is the most cyclical component of GDP and is the key driving force underlying the emergence of turning points in the economy. The flow of investment expenditures is volatile because investment, unlike consumption, represents the desired change of a stock. As the capital stock tends to move with income and consumption, the change in the stock shows sharper fluctuations than the change in income. Furthermore, a downturn in investment is inherently temporary and bears the seeds of subsequent recovery. Once the lower desired capital stock has been achieved, the flow of investment stops falling and starts increasing again to keep the capital stock stable at the new level.

5. The trends are computed with Hendrick-Prescott filters.

6. To reduce the potential risk of bad data contaminating the results, we have excluded outliers (investment volatility more than three standard deviations above the mean).

7. The correlation coefficient exceeds 0.75.

8. The large drop in the poverty incidence in Latin America comes from new surveys and from revisions to consumption levels. The surveys predate the recent turmoil in the region, particularly in Argentina, where the incidence of poverty has increased substantially after three years of recession. The large recent rise in poverty in Argentina reflects the national poverty line. The rise using the World Bank's $1 per day or $2 per day may

have a lower magnitude because average per capita income in Argentina ($12,100 in purchasing power parity terms in 2001, and $7,750 in 1995 terms) is much higher than the $2 per day level.

9. See, for example Datt and Ravallion (2002).

10. The growth rates are weighted by labor value added, which may bias the regional estimates downward if high-wage countries have slower growth rates. Among other things, this method would affect a world total because industrial countries have significantly higher wages than developing countries.

11. TFP is not the same as technical progress, but instead includes all contributions to growth that are not captured by data on capital and labor. However, the integration of more efficient technologies into production can raise the level of TFP.

12. Technically, only the fraction of capital accumulation that arises from the underlying propensity to invest at a constant rate of TFP growth should be viewed as capital's independent contribution to output growth. Hulten (2000) found that correcting for the induced capital accumulation caused by higher TFP almost doubled estimates of the contribution of TFP to growth for the United States.

13. See Loayza, Fajnzylber, and Calderón (2002).

14. We will use the term "workers" as shorthand for the working population between ages 15 and 65.

15. With the significant exception of SSA, where AIDS has dramatically reversed life expectancy, and to a lesser extent ECA, where health systems deteriorated during the transition toward market economies.

16. See, for example, Loayza, Fajnzylber, and Calderón (2002) and Masson, Bayoumi, and Samiei (1998).

17. Model simulations start in the base year 1997, and net capital flows for that year are derived from the Global Trade Analysis Project (GTAP), release 5.0, database. Note that the GTAP data, though based on official statistics, are adjusted to ensure global accounting consistency (that is, the sum of the capital account across all regions is identically equal to zero). The world capital account has had a significant and increasing residual over the past few years. The values in the first three columns of table 1.10 (that is, the average savings to investment ratios for the period 1997–2001) are largely consistent with the initial 1997 base levels from the GTAP dataset. The only region where the sign of the capital account balance differs between 1997 and the 1997–2001 average is the MENA, which is subject to considerable volatility because of the price of oil, the region's main export.

For all other regions, the sign of the observed early period capital account balance is consistent with the 1997 base year, though the magnitude may differ. The difference in magnitude is easily magnified because the

capital account balance is a residual item. Thus, even if there is little volatility in the savings and investment components individually, there could be significantly more variation in the capital account balance.

Finally, as already highlighted in the table note, the capital account imbalance at the global level has been large of late—and is increasing. In the model simulations, the base data are adjusted to remove the global imbalance, and the model itself ensures global accounting consistency in each year of any simulation. (The model could track perfectly the observed saving and investment ratios for each country except one. Or there would have to be a residual country in the model that would absorb any adjustments to ensure global accounting consistency.) Even if the global capital account imbalance is small as a share of global GDP, squeezing out the $100 billion to 200 billion residual error is bound to have significant effects on the capital account of individual countries, even a large one such as the United States. If the U.S. imbalance is $400 billion and the entire adjustment is forced on it, the U.S. capital account imbalance could change by as much as 50 percent.

18. Note that this concept is flow based. All industrial countries have significant assets in other industrial countries as well as in developing countries. One would anticipate, as in the case of Japan, that as the population ages, the retired elderly will draw down their accumulated savings, including those funds invested abroad.

19. Table 1.10 compares the observed investment ratios over the 1997–2001 period with the end-of-period investment ratio generated by the model. The starting point of the model, 1997, has an investment ratio of 20.5 for Latin America. Thus, the scenario is forecasting virtually no change in the ratio.

References

Barro, Robert, and Xavier Sala-i-Martin. 1992. "Convergence." *Journal of Political Economy* 100(2): 223–51.

Baxter, Marianne, and Mario J. Crucini. 1993. "Explaining Saving—Investment Correlations." *American Economic Review* 83(3): 416–36.

Bhalla, Surjit. 2002. *Imagine There's No Country: Poverty, Inequality, and Growth in the Era of Globalization*. Washington, D.C.: Institute for International Economics.

Brock, William A., and Steven N. Durlauf. 2001. "Growth Empirics and Reality." *The World Bank Economic Review* 15(2): 229–72.

Collins, Susan M., and Barry P. Bosworth. 1996. "Economic Growth in East Asia: Accumulation versus Assimilation." *Brookings Papers on Economic Activity* 2: 135–91.

Crucini, Mario J. 1997. "Country Size and Economic Fluctuations." *Review of International Economics* 5(2): 204–20.

Datt, Gaurav, and Martin Ravallion. 2002. "Is India's Economic Growth Leaving the Poor Behind?" *Journal of Economic Perspectives* 16(3): 89–108.

Denison, Edward F. 1972. "Some Major Issues in Productivity Analysis: An Examination of the Estimates by Jorgenson and Griliches." *Survey of Current Business* 49(5, part II): 1–27.

Easterly, William, and Ross Levine. 2001. "It's Not Factor Accumulation: Stylized Facts and Growth Models." *The World Bank Economic Review* 15: 177–219.

Feldstein, Martin, and Charles Horioka. 1980. "Domestic Savings and International Capital Flows." *Economic Journal* 90(358): 314–29.

Hulten, Charles R. 2000. "Total Factor Productivity: A Short Biography." National Bureau of Economic Research (NBER) Working Paper no. 7471. Boston.

Jorgenson, Dale W., and Zvi Griliches. 1967. "The Explanation of Productivity Change." *Review of Economic Studies* 34(3): 249–83.

———. 1972. "Issues in Growth Accounting: A Reply to Edward F. Denison." *Survey of Current Business* 52(5, part II): 65–94.

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido–Lobatón. 2002. "Governance Matters II: Updated Indicators for 2000–01." Working Paper no. 2772. World Bank, Washington, D.C. February.

Klenow, Peter, and Andrés Rodríguez-Clare. 1997. "Economic Growth: A Review Essay." *Journal of Monetary Economics* 40(3): 597–617.

Krugman, Paul. 1994 "The Myth of Asia's Miracle." *Foreign Affairs* 73(6): 62–77 (November/December).

Loayza, Norman, Pablo Fajnzylber, and César Calderón. 2002. "Economic Growth in Latin America and the Caribbean: Stylized Facts, Explanations, and Forecasts." World Bank, Washington, D.C. June. Processed.

Masson, Paul R., Tamim Bayoumi, and Hossein Samiei. 1998. "International Evidence on the Determinants of Private Saving." *World Bank Economic Review* 12(3): 483–501.

Nelson, Richard R., and Howard Pack. 1999. "The Asian Miracle and Modern Growth Theory." *Economic Journal* 109(July): 416–36.

Parente, Stephen L., and Edward C. Prescott. 1994. "Barriers to Technology Adoption, Learning-by-Doing, and Economic Growth." *Journal of Political Economy* 102(2): 298–321.

———. 2000. *Barriers to Riches*. Cambridge, Mass.: MIT Press.

Ravallion, Martin. 2002. "Have We Already Met the Millennium Development Goal for Poverty?" World Bank, Washington, D.C. Processed.

Senhadji, Abdelhak. 2000. "Sources of Economic Growth: An Extensive Growth Accounting Exercise." International Monetary Fund Staff Papers 47, no. 1. Washington, D.C.

Solow, Robert. 2001. "Applying Growth Theory across Countries." *The World Bank Economic Review* 15(2): 283–88.

Wodon, Quentin, Rodrigo Castro-Fernandez, Kihoon Lee, Gladys Lopez-Acevedo, Corinne Siaens, Carlos Sobrado, and Jean-Philippe Tre. 2002. "Poverty in Latin America: Trends (1986–1998) and Determinants." World Bank, Washington, D.C. February. Processed.

Young, Alwyn. 1992. "A Tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore." In O. J. Blanchard and S. Fisher, eds., *NBER Macroeconomics Annual 1992*. Cambridge, Mass.: MIT Press, pp. 13–53.

———. 1995. "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Experience." *Quarterly Journal of Economics* 110(3): 641–80.