Growth Outlook and Macroeconomic Challenges in Emerging Economies and Developing Countries

The recovery of the global economy has been more robust than expected. Driven by strong internal demand in many emerging economies and the recovery of global trade, GDP growth in emerging and developing countries is projected to accelerate to 6.3 percent in 2010, from 2.4 percent in 2009. Supporting the economic recovery are expansionary macroeconomic and, especially, fiscal policies. Fiscal deficits in emerging and developing countries, up by almost 3 percent of GDP in 2009, are projected to remain high in 2010. More than in previous crises, many countries sustained spending plans and raised social spending to mitigate the effects of the downturn on the poorest people, although the differences among countries are wide. While financial market conditions for emerging and developing countries are improving and capital flows are returning, international bank financing and foreign direct investment are projected to remain weak in 2010.

Although the short- and medium-term growth prospects for most emerging and developing countries are positive, the question arises: to what extent does the current shock have longer-run implications that could knock countries off their track of solid growth? The question is especially important for low-income countries because poverty is so much more pressing there than in countries with higher incomes. History does not suggest that low-income countries can uniformly escape global shocks without absorbing long-lasting damage to both growth and welfare. In past crises, it has often taken several years for low-income countries to bring growth rates back into positive territory. Even so, the turnaround in low-income countries this time is projected to be faster than in previous crises, thanks to countercyclical fiscal policies and better macroeconomic fundamentals in place at the beginning of the crisis. Commodity exporters are helped by the fairly quick recovery of commodity prices. And financial systems in low-income countries have been less affected by turmoil than those in advanced economies.

The recovery is still vulnerable, however, and the rapid expansion of fiscal deficits and the greater reliance on domestic sources of financing in many countries may not be sustainable. External debt ratios in low-income countries, deteriorating in the short run, should be watched.

Optimal exit policies from policy support should depend on country circumstances.

- *Countries where private demand is still weak should continue supporting activity if policy space is available.*
- *Some countries, however, are facing financing constraints—they cannot delay adjustment. Donors should assist them by following up on commitments to increase aid.*
- *All countries should adopt credible medium-term fiscal adjustment plans to bolster confidence in macroeconomic policies and undertake policy reforms to secure long-term growth.*

The economic recovery

Global economic activity is recovering from the deepest recession since the Second World War, albeit at a moderate pace. According to the International Monetary Fund's (IMF) *World Economic Outlook,* growth of global output will increase to 4.2 percent in 2010, from a decline of 0.6 percent in 2009 (table 3.1). The recovery, supported by improving financial conditions and rising world trade (figure 3.1), is led by emerging economies in Asia, where growth rates now exceed precrisis levels. The prospects for developing countries, including the poorest, are improving as well, although growth rates have not yet recovered to the levels seen in the years before the crisis.[1]

The underlying factors driving the expansion differ from country to country. While economies in Asia and Latin America are bolstered by a recovery of private consumption and investment, private demand growth in emerging Europe is expected to remain sluggish, and several countries remain dependent on exceptional policy stimulus. Commodity exporters are benefiting from firmer global demand for raw materials and higher commodity prices. Even so, the recovery remains vulnerable, most notably in advanced countries and the economies of Eastern Europe, where high unemployment, moderate income growth, and weaker household balances are dampening consumption growth, posing risks for the global outlook. In addition, in the medium–term, growth rates in some groups of countries, especially low-income countries, are not expected to reach the high levels recorded before 2008.

Because the recovery is in an early stage and unemployment rates are still elevated, global inflation has remained low, although some economies, especially in Asia, are showing the first signs of price pressures. Inflation risks are rising in Latin America as well, where output gaps in some countries are closing rapidly.

Commodity prices are recovering

Following the sharp drop in commodity prices in late 2008, prices for most commodities rebounded sharply in 2009 and are continuing their upward trend in 2010 as the global recovery gains momentum (figure 3.2). The increases are helping to mitigate the impact of the crisis on commodity exporters. Food prices are the exception, because good harvests in Sub-Saharan Africa and elsewhere have given an opportunity to rebuild stocks. But food

TABLE 3.1   Global output

percent change

Region	2007	2008	2009	Projection	
				2010	2011–13
World output	**5.2**	**3.0**	**−0.6**	**4.2**	**4.4**
Advanced economies	2.8	0.5	−3.2	2.3	2.4
Emerging and developing economies	8.3	6.1	2.4	6.3	6.6
Central and Eastern Europe	5.5	3.0	−3.7	2.8	3.8
Commonwealth of Independent States	8.6	5.5	−6.6	4.0	4.1
Developing Asia	10.6	7.9	6.6	8.7	8.6
Middle East and North Africa	5.6	5.1	2.4	4.5	4.8
Sub-Saharan Africa	6.9	5.5	2.1	4.7	5.7
Western Hemisphere	5.8	4.3	−1.8	4.0	4.2

Source: World Economic Outlook.

FIGURE 3.1   **Short-term indicators of production and trade are recovering**
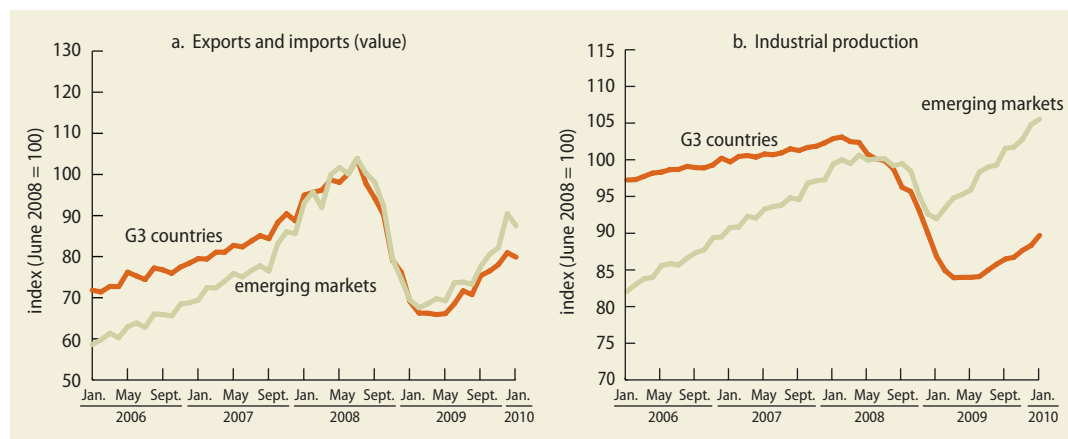
Source: IMF International Financial Statistics; Bloomberg; Haver Analytics; central banks.
Note: Data are weighted by PPP-GDP, 2006.

FIGURE 3.2   **Commodity price indexes rebounded strongly in 2009**
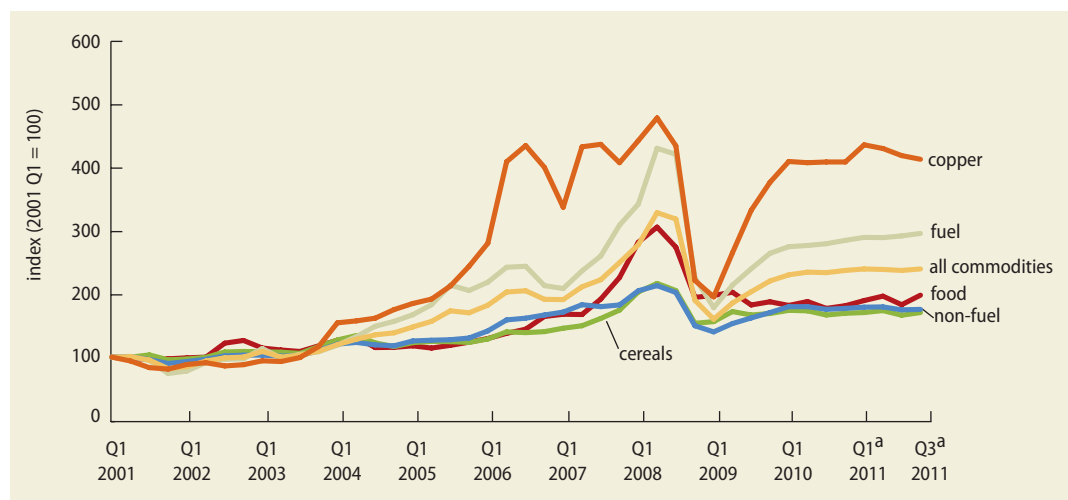
Source: IMF.
*Note:* Indexes are in U.S. dollars.
a. Projected

and commodity prices, relatively high by historical standards, are projected to remain so, given the prospects for further medium-term demand growth and continuing supply constraints in many sectors.

Financial conditions are improving, but financial flows remain below precrisis levels

Financial market conditions for emerging and developing countries have improved consider-

ably since the onset of the crisis. Bond spreads have declined, stock markets in both emerging and developing countries have recovered sharply, and exchange rate volatility has come down considerably (figures 3.3–3.5). Some borrowers—sovereigns and prime corporations in particular—quickly regained market access following a brief interruption at the end of 2008. Financial market access for sub-investment-grade borrowers in emerging and developing countries has also improved. But access to international bank financing remains

FIGURE 3.3   **Bond spreads have declined in emerging markets and developing countries**
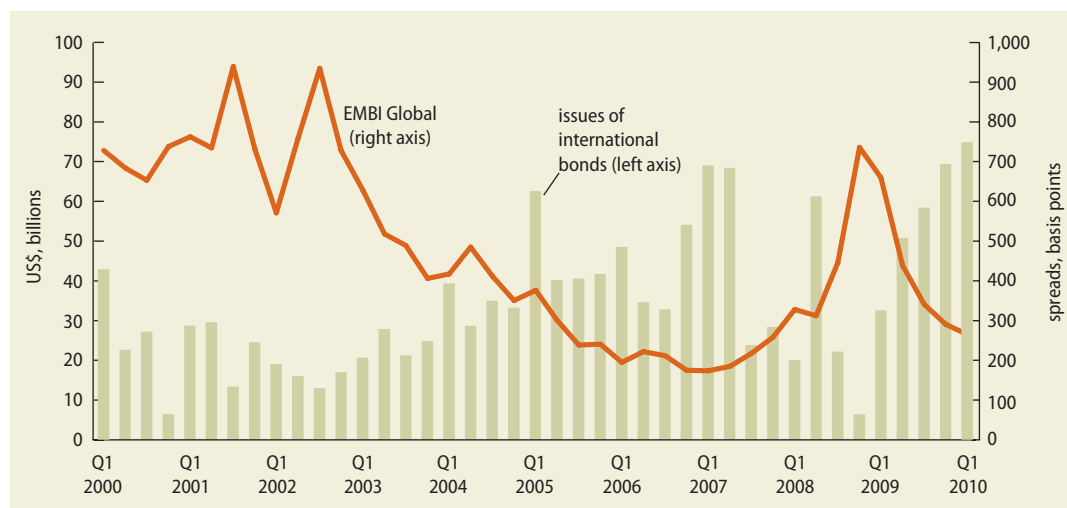
Source: Dealogic; Bloomberg.
Note: Bond issues and spreads as of end-March 2010..

**FIGURE 3.4**   **Share prices have recovered sharply**
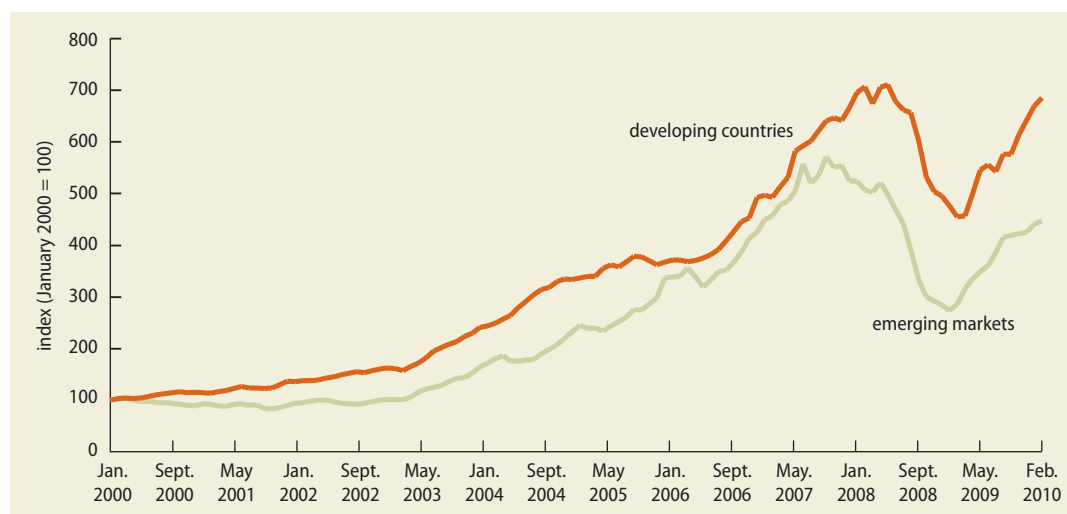
Source: IMF International Financial Statistics.
Note: Prices are in the local currency.

limited as banks in advanced economies continue deleveraging.

Financial policies, such as improved financial sector regulation and crisis measures, have contributed to avoidance of widespread banking crises in emerging and developing countries. The public response to the financial crisis has been broad, covering several instruments, such as liquidity support, deposit insurance, bank interventions, and recapitalizations. Banking sectors in many emerging economies have also benefited from higher financial market resilience, including less volatility in exchange and interest rates,[2] and therefore have avoided negative dynamics from balance sheet effects.

FIGURE 3.5   **Exchange rates have been less volatile: Daily spot exchange rates**
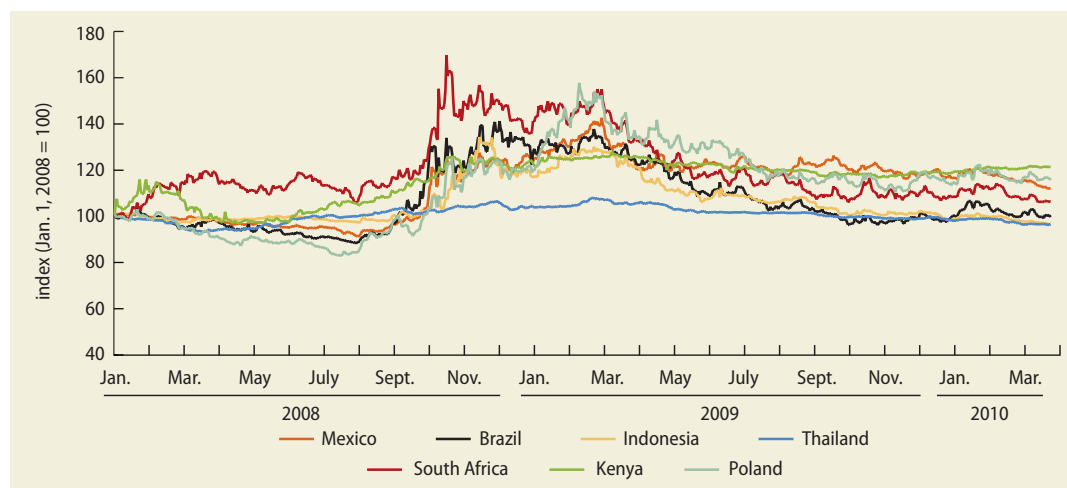
Source: Bloomberg.
*Note:* Exchange rates are in national currency per U.S. dollars.

FIGURE 3.6   **The cost of external debt financing has come down**
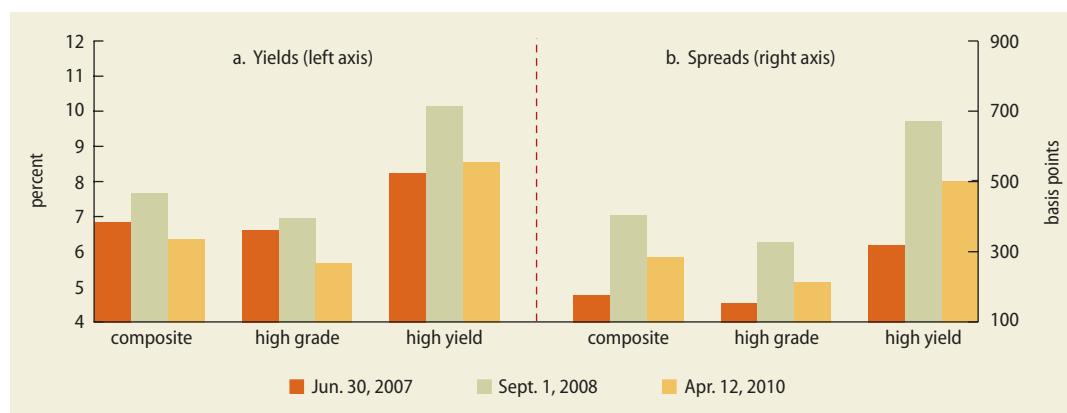
Source: Bloomberg.

Even so, concerns about systemic risks to the solvency of banks and corporations linger. The cost of external debt financing remains elevated in some emerging and developing countries, where spreads on high-yield external corporate bonds are still substantially above those before the collapse of Lehman Brothers in September 2008 (figure 3.6). In addition, some countries in Eastern Europe and the Commonwealth of Independent States (CIS) continue to face uncertainties as a result of high external debt refinancing needs and private sector foreign currency debt. The fallout from the crisis has also affected bank loan portfolios in many countries, as evidenced by the rising shares of nonperforming loans (figure 3.7).

Despite the general improvement in market conditions, financial flows to emerging and developing countries have not recovered to those seen in the years preceding the financial crisis (table 3.2). In emerging economies, net inflows of foreign financial resources (capital flows and transfers) are not expected to exceed 8.2 percent of GDP this year, down from an average of about 12 percent in 2007–08, mainly because of the sharp drop in bank

FIGURE 3.7   **The share of nonperforming loans to total loans has been rising**
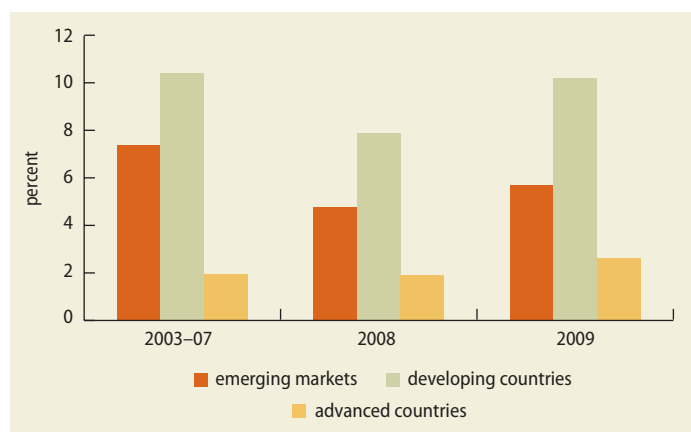
Source: IMF 2009b.

TABLE 3.2   **Net financial flows**
percent of GDP

Flows	2007	2008	2009	2010
Emerging market economies	12.6	11.4	8.7	8.2
Private capital flows, net	8.0	7.0	3.2	3.1
of which: private direct investment	5.4	5.1	3.3	3.3
Private portfolio flows	0.8	−0.5	−0.3	0.1
Private current transfers	4.1	3.7	3.8	3.6
Official capital flows and transfers, net	0.4	0.7	1.7	1.6
Memorandum item:				
Reserve assets	−3.9	−1.6	−2.5	−1.9
Developing countries	14.0	17.7	13.9	13.9
Private capital flows, net	6.6	7.7	5.2	5.3
of which private direct investment	6.6	6.2	4.8	4.7
Private portfolio flows	−0.7	−0.6	−0.4	−0.2
Private current transfers	5.6	5.8	5.2	5.1
Official capital flows and transfers, net	1.8	4.2	3.6	3.5
Memorandum item:				
Reserve assets	−4.0	−2.3	−1.6	−1.0

Source: World Economic Outlook.
*Note:* Equally weighted.

financing (figure 3.8), especially in Asia and Latin America, and foreign direct investment. Developing countries are facing weak foreign direct investment activity as well, because overcapacity in extractive industries remains considerable despite rising global demand for commodities. Overall, net financial flows are projected to decline to 13.9 percent of GDP in 2010, from 15.9 percent in 2007–08.

The drop in foreign direct investment in developing countries is partly offset by the

recovery of workers' remittances (table 3.3). Although remittances to countries in Latin America, North Africa, and the Middle East were weaker than expected in 2009, they appear to have reached a bottom toward the end of the year. At the same time, remittance flows to South and East Asia, largely originating in the Gulf countries, surprised on the upside in 2009, with particularly strong increases in Bangladesh and Pakistan. Overall, remittances to emerging and developing countries are projected to increase by 2 percent in 2010, following a 6 percent decline in 2009.

Current account imbalances in emerging and developing countries have been shifting in recent years, mainly as the result of the sharp swings in world trade and terms of trade since late 2008 (figure 3.9). Fuel-exporting countries have been most hit by fluctuations in the external accounts, a reflection of the high volatility of oil prices and insufficient export diversification. Nonfuel primary product exporters face strong fluctuations as well, but less so than fuel-exporting countries. Despite these fluctuations, there have been reductions in external imbalances in the past two years within the group of emerging and developing countries. The number of emerging economies with high balance of payments deficits and the number of high surplus emerging economies and developing countries declined in 2009 (figure 3.10).

Even with the large differences in external conditions among emerging and developing countries, there has been a remarkable similarity in international reserve developments across groups of countries and regions. Helped by the recovery in international trade and capital flows, and the allocation of IMF special drawing rights, almost all countries rebuilt international reserves (as measured by reserve coverage in months of imports) in 2009, after a decline in 2008 (figure 3.11). At the end of 2009, 80 percent of emerging markets and 75 percent of developing countries had reserves that could be considered adequate (equivalent to three months of imports of goods and services). For emerging economies, reserves as a share of short-term debt also increased, and at the end of 2009 about 70 percent of emerg-

FIGURE 3.8 **Bank financing to emerging markets dropped sharply in 2009**
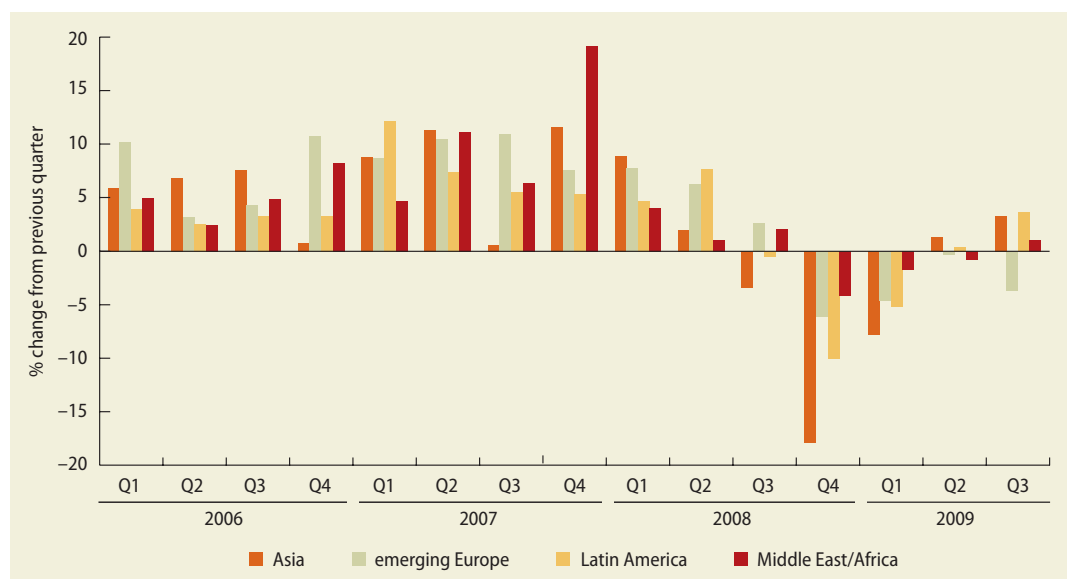
Source: Bank for International Settlements (BIS).
Note: Adjusted for exchange rate changes. Changes are calculated as flow adjusted for exchange rate changes as a share of the stock in the previous quarter.

TABLE 3.3 **Inflows of international remittances**
US$billions

	Annual average 1992–2002	Annual average 2003–07	2008	2009[a]	2010[b]	2011[c]
Emerging market economies	58.9	177.2	283.3	266.0	271.7	279.1
Developing countries	8.4	26.1	47.1	46.4	47.5	48.8
Fragile states	2.2	5.1	9.7	8.6	8.8	9.1

Source: World Bank remittances data.
a. Remittances include workers' remittances, compensation of employees, and migrant transfers.
b. Estimate.
c. Forecast base case scenario.

ing economies had reserves that exceeded the stock of short-term debt.[3]

Thanks to good policies, the recovery is stronger than in past crises

Overall, emerging and developing countries weathered this global crisis better than past ones. Their financial markets and exchange rates have not shown the sharp fluctuations of past crises, and the rebound in economic activity is stronger than expected. Healthier fiscal accounts, reduced debt, better debt maturity structures, low inflation, and higher international reserves gave many countries room for countercyclical policies that were

often not an option in previous crises. Further, stronger balance sheets and continued access to financing, especially for prime borrowers, helped private corporations in emerging and developing countries to deal better with adverse conditions than they had in the past. Local bond markets have also benefited some of these countries, with larger enterprises in Asia and Latin America able to rely on local markets for their refinancing needs.

Nonetheless, the crisis has depressed disposable incomes in many countries

The crisis and the pace of recovery have deeply affected disposable incomes in many coun-

FIGURE 3.9   Changes in terms of trade have swung sharply since 2008
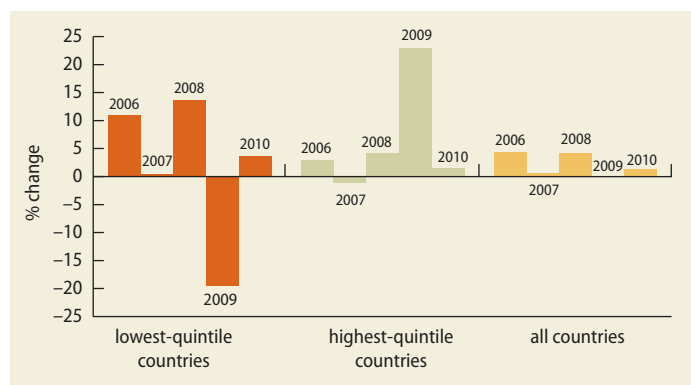
Source: IMF staff calculations.
Note: Quintile groups are based on the average of terms-of-trade changes in 2008–09 and 2009–10.

have differed. In general, most emerging and developing countries first focused on addressing weakening confidence and containing the impact of the financial market crisis on the real economy. In a second stage, these policies have been followed by comprehensive efforts to support domestic demand and growth in the medium term—mainly through expansionary macroeconomic policies. In most countries these policies are still in place, and the start of the third stage—exiting from extraordinary policy support—has been gradual thus far.

Monetary policy provided support in most countries

Aided by moderate inflation trends and less volatile exchange rates, central banks in most emerging and developing countries reduced policy interest rates in 2009. About 70 percent of emerging economies and close to 60 percent of developing countries followed a path toward lower rates last year. In some countries, higher policy interest rates were initially needed to preserve market confidence. These increases were more modest than in previous crises, however, and in many cases were quickly reversed. In most countries, lower interest rates were associated with depreciations of nominal effective exchange rates. As a result, monetary conditions in most emerging and developing countries—as measured by a simple summary indicator incorporating nominal interest rates and nominal effective exchange rates[4]—ap-

tries, where a contraction in real activity was sometimes reinforced by a deterioration in the terms of trade (figure 3.12). In 2008–10, about a third of emerging and developing countries were experiencing declines in disposable incomes, with potentially serious adverse effects on poverty. Central and Eastern Europe has been particularly hard hit, with nine countries facing cumulative income declines, in total averaging more than 8 percent.
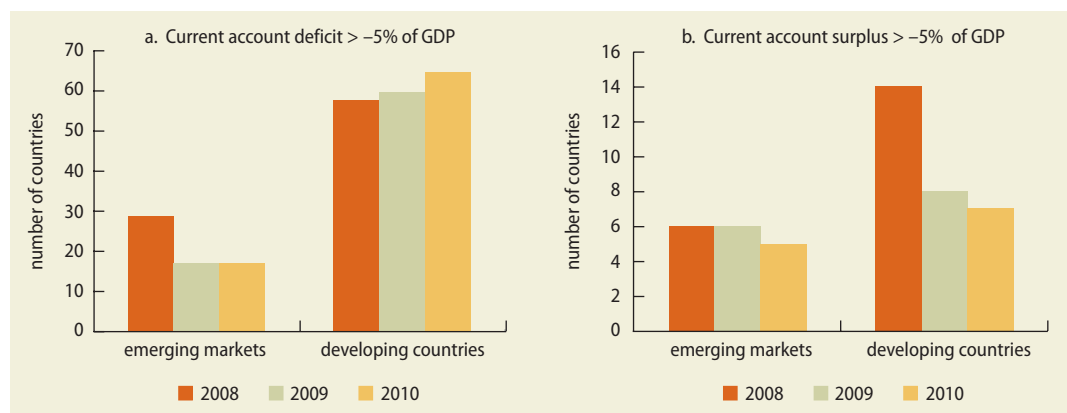
Macroeconomic policy trends

Reflecting cross-country differences in initial conditions and the international transmission of the crisis, macroeconomic policy responses

FIGURE 3.10   External imbalances have come down in emerging and developing countries

Source: World Economic Outlook.

FIGURE 3.11   **Almost all countries rebuilt their international reserves in 2009**
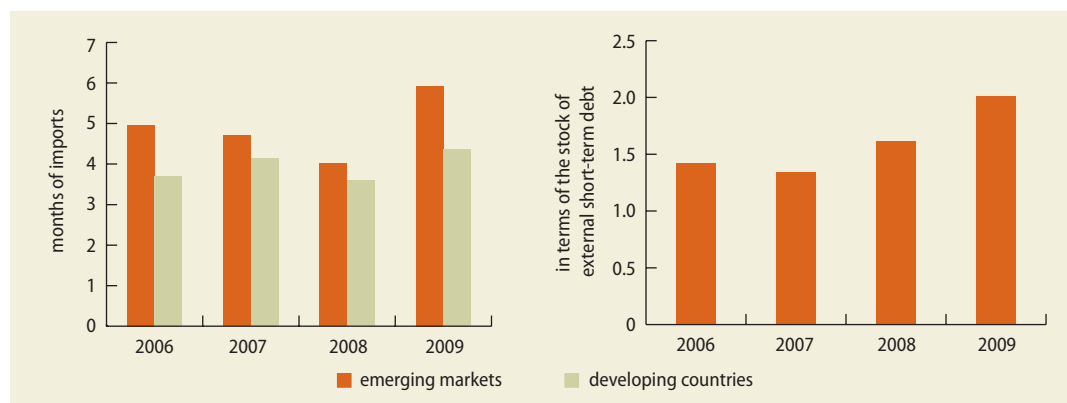

Source: World Economic Outlook.
Note: The median ratio is shown. "Stock of the external short-term debt" = outstanding (on remaining maturity basis) plus amortization scheduled on medium- and long-term debt.

pear to have become more accommodating in 2009 (figure 3.13).[5]

The financial crisis resulted in a sharp decline in money growth in emerging and developing countries (figure 3.14). The decline was largest in countries that had seen the strongest growth in the precrisis years. But as a result of the even stronger decline in nominal GDP growth rates, measures of excess liquidity, such as the nominal money gap, increased. This suggests that despite the fall in money growth, additional liquidity remained available to support corporations and households during the crisis period.

## Expansionary fiscal policies support the recovery

Measured by the median general government balance, fiscal deficits in emerging and developing countries expanded by almost 3 percent of GDP in 2009 (figure 3.15) and are projected to increase further in 2010 in more than one-third of the countries, despite some decline in the median balance. Some countries, especially emerging economies, have put stimulus plans in place. But in most countries the widening deficit is the result of weakening revenue, including the disproportionate impact of the crisis on trade—and thus on revenues from import tariffs—and on consumption taxes. Some countries have also lost

FIGURE 3.12   **Deteriorating terms of trade sometimes reinforce contraction in economic activity**
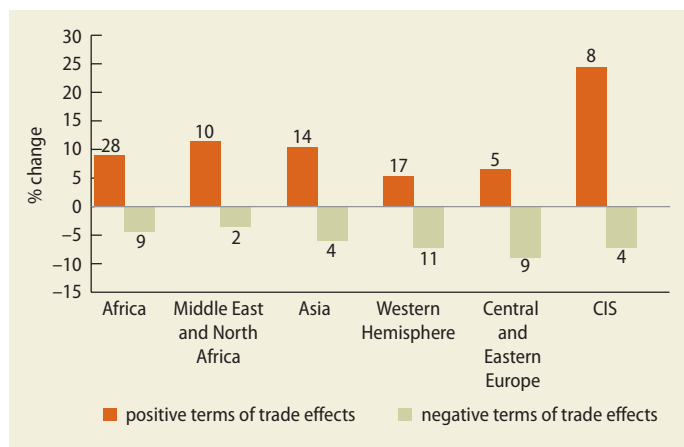
Source: IMF Staff calculations.
Note: The figure shows, by region, average real per capita GDP growth rates adjusted for the per capita value of net terms-of-trade changes. The numbers above and below the bars show the number of countries.

corporate tax revenue as the contribution of key sectors in the economy (such as natural resources and other export sectors) declined. Moreover, tax administrations may be facing bigger enforcement challenges during the crisis and its aftermath as tax planning becomes more aggressive. Many countries are more exposed to such challenges because of their weak administrative capacity, large informal sectors, and the constrained cash positions of taxpayers.

FIGURE 3.13   Monetary policy conditions became more accommodating in 2009
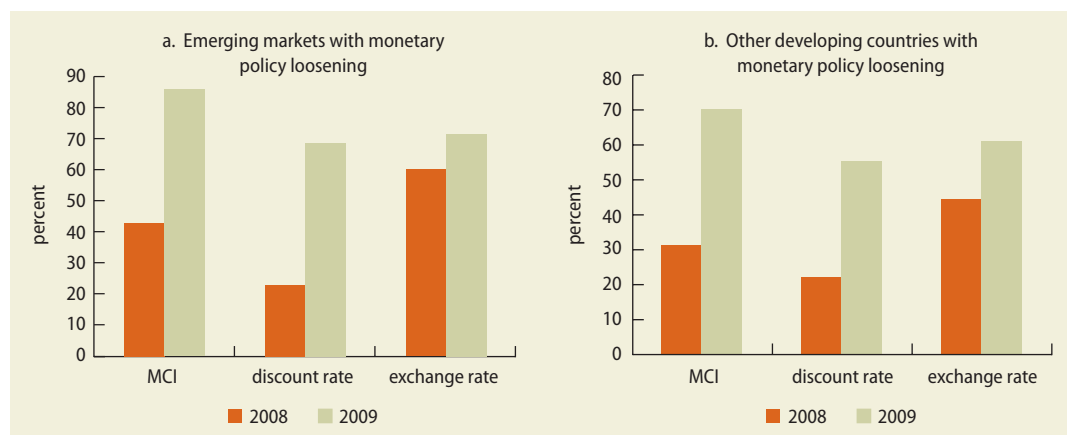
Source: IMF International Financial Statistics.
Note: Monetary policy loosening is based on Monetary Conditions Index (MCI) calculations.

FIGURE 3.14   Average year-on-year growth in money and the money gap in emerging markets
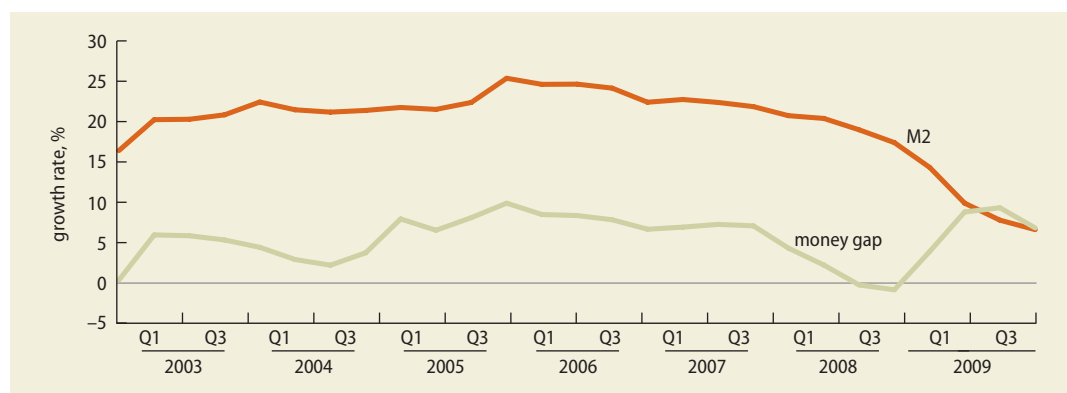
Source: IMF International Financial Statistics; Haver Analytics.
Note: The money gap is the difference between year-on-year growth rates of the M2 money supply and nominal GDP. The sample includes emerging-market countries that have data on both for the whole sample period shown.

Despite falling revenues, emerging and developing countries as a group have allowed automatic stabilizers to work and have maintained previous spending plans during the financial crisis. To some extent they have increased social spending related to the crisis, supporting domestic demand and sustaining the recovery. But the overall numbers on spending conceal wide differences in policy stances and conditions. About half of emerging and developing countries cut spending in 2009 in reaction to the crisis, a pattern likely to be repeated to some extent in 2010 (figure 3.16). The steepest spending cuts were in fuel-exporting countries that faced sharp terms-of-trade deteriorations after the collapse of oil prices in the second half of 2008. Expenditures were less affected in other emerging and developing countries, especially nonfuel commodity exporters. Thanks to higher oil prices, many fuel-exporting countries will be able to reverse these policies in 2010.

But many countries are not on a sustainable fiscal path

Widening government deficits pose financing challenges for many countries, especially

FIGURE 3.15   Fiscal deficits expanded in 2009
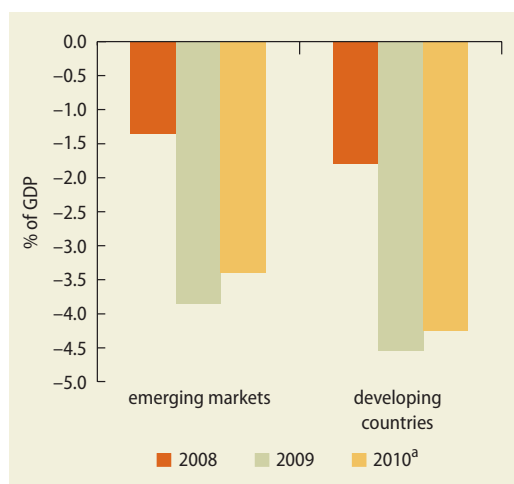
Source: World Economic Outlook.
a. Projected.

those with limited access to capital markets. Emerging markets rapidly regained access to sovereign debt markets following the collapse of Lehman Brothers in September 2008, but developing countries with limited or no market access are more constrained in their options. A country-by-country analysis of budget financing shows that most countries in this group were able to finance rising deficits with increased domestic and foreign financing. On average, budget financing needs of developing countries increased by about 3 percentage points of GDP in 2009, about half from domestic sources (mainly domestic bank loans and the drawing down of government deposits in the banking system) and the rest from foreign sources (mainly aid). In some countries, however, governments could not mobilize significant additional foreign resources despite

FIGURE 3.16   Growth in real primary spending, 2010 projections
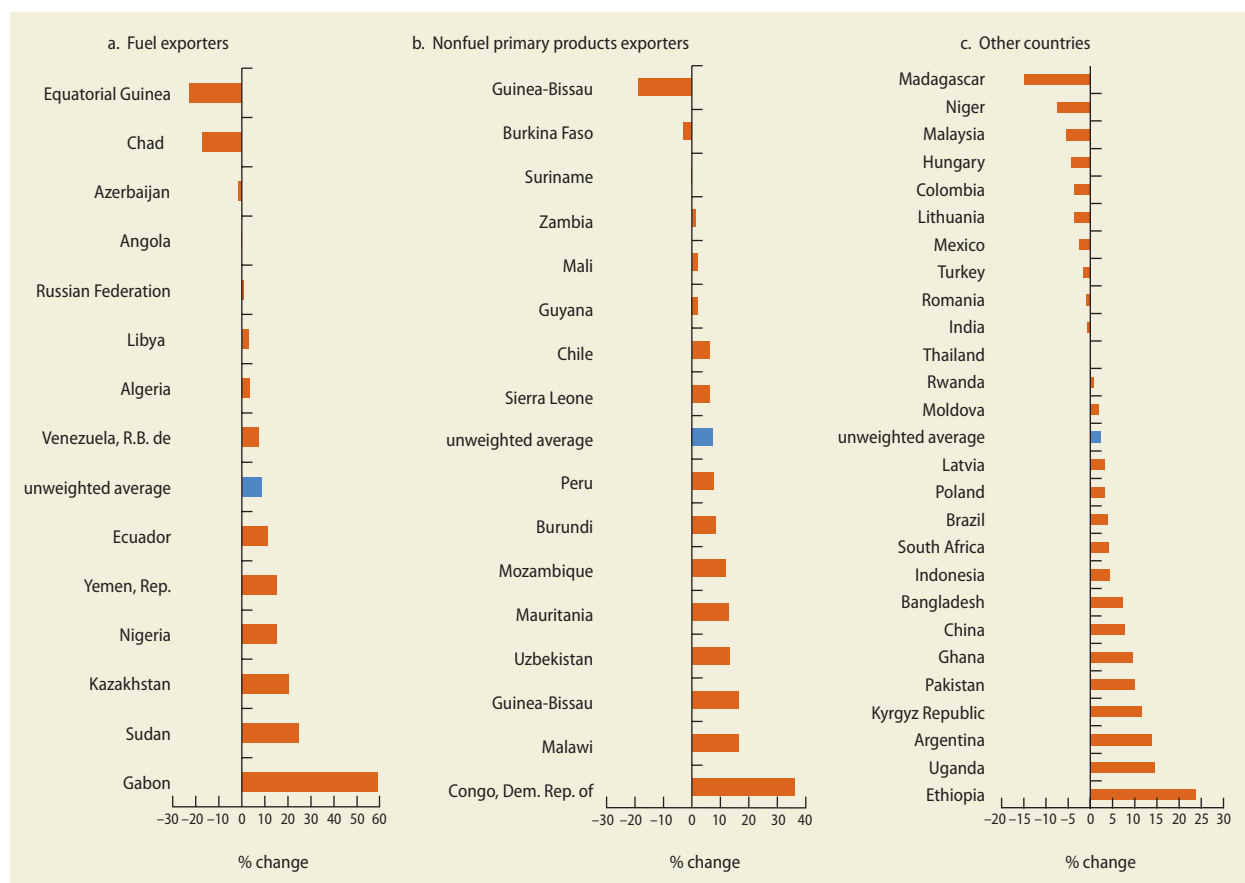
Source: World Economic Outlook.

MAP 3.1 **How the crisis undermined GDP growth in 2009**

GDP real growth rate:
% change (2009)

	< −6
−6 ≤	< −3
−3 ≤	< 0
0 ≤	< 3
3 ≤	< 7
7 ≤	
	no data

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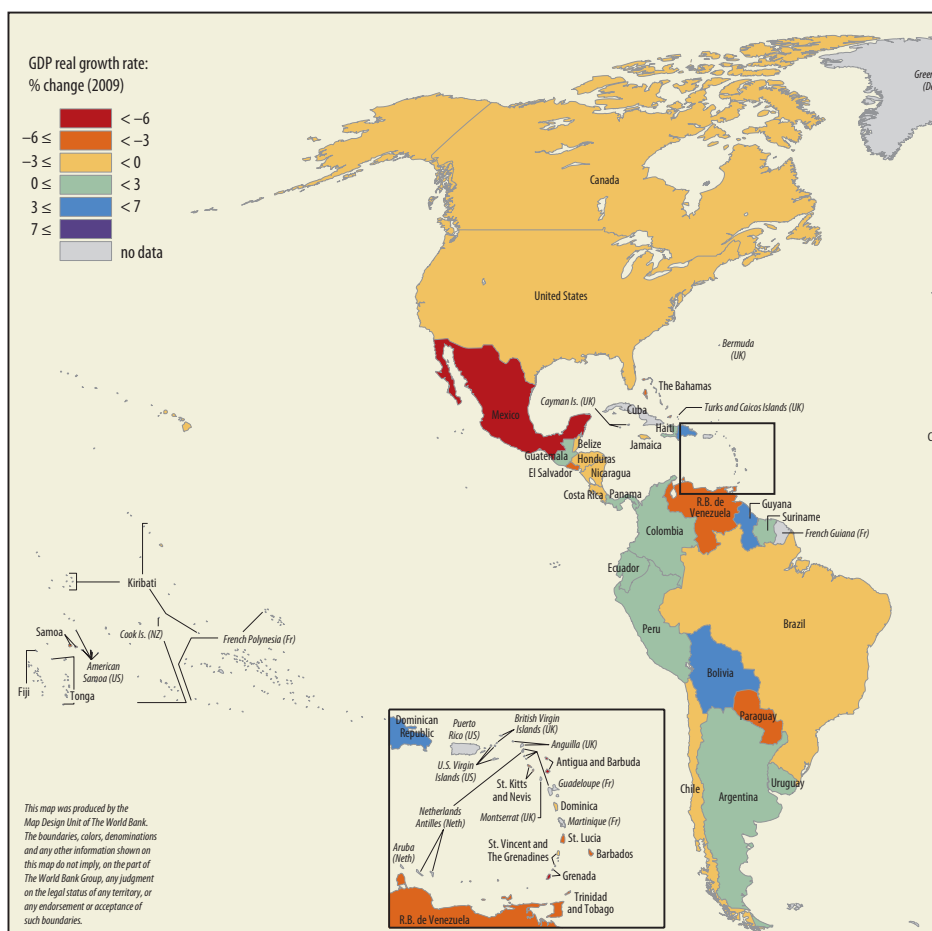
Source: World Economic Outlook.

pressing needs. As budget deficits remain elevated in 2010, many governments will continue to borrow heavily in domestic markets.

This is not sustainable. While fiscal stimulus in many developing countries has supported the recovery, there are risks of crowding out through higher interest rates. Recent International Monetary Fund (IMF) research shows significant effects of fiscal deficits on interest rates, which could dampen private investment and force governments to spend more on debt service payments and less on social programs.[6] These effects will be stronger when initial deficits or debts are high. Expansionary fiscal policies may also become counterproductive if the positive demand effects are more than offset by higher private saving or reduced investment. That may occur if consumers and investors adapt their behavior to take into account higher future tax liabilities.

The macroeconomic policy mix

Most emerging and developing countries as a group appear to have supported economic activity in 2009 with a combination of expansionary fiscal and monetary policies (figure 3.17 and box 3.1). In some countries, expansionary fiscal policies were combined with less accommodating monetary conditions. Such a policy mix is not necessarily incoherent. In fact, it may be useful in countries facing large capital
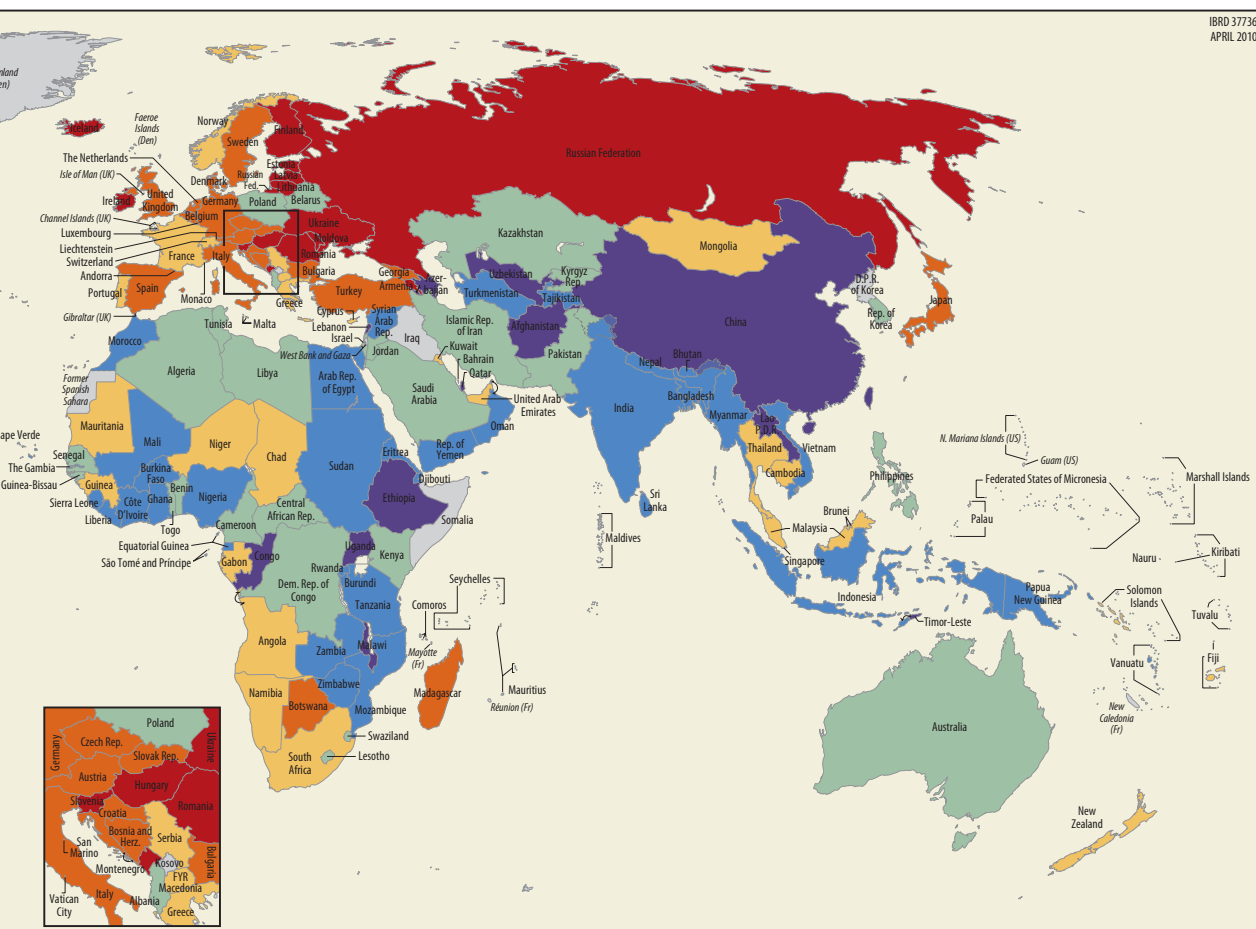
outflows and pressures on the exchange rate. In such a situation, rising interest rates may be appropriate to avoid excessive exchange rate volatility and ensure that sufficient external financing remains available for the economy. On average, growth in countries with this policy mix in 2009 was not weaker than in countries that had expansionary policies on both the monetary and fiscal front.

Adapting monetary and fiscal policies to changing circumstances

As the recovery in emerging and developing countries takes hold, questions arise about the best approach to exit from policy stimulus.[7] The appropriate timing and nature of exit policies depend on individual country circumstances. In many countries, where private demand components are still cyclically weak and sufficient policy space is available, monetary and fiscal policy should remain geared toward supporting activity. Governments in these countries should lay out a credible exit strategy to maintain confidence in the authorities' commitment to macroeconomic stability. Monetary and fiscal support should be gradually removed when private demand is sufficiently strong to sustain growth. In addition, to support fiscal consolidation, reforms to strengthen fiscal institutions could be initiated now.

FIGURE 3.17   Most countries responded with expansionary fiscal and monetary policy

a. Emerging markets   b. Developing countries

- ■ monetary and fiscal loosening
- ■ monetary and fiscal tightening
- ■ monetary loosening and fiscal tightening
- ■ fiscal loosening and monetary tightening
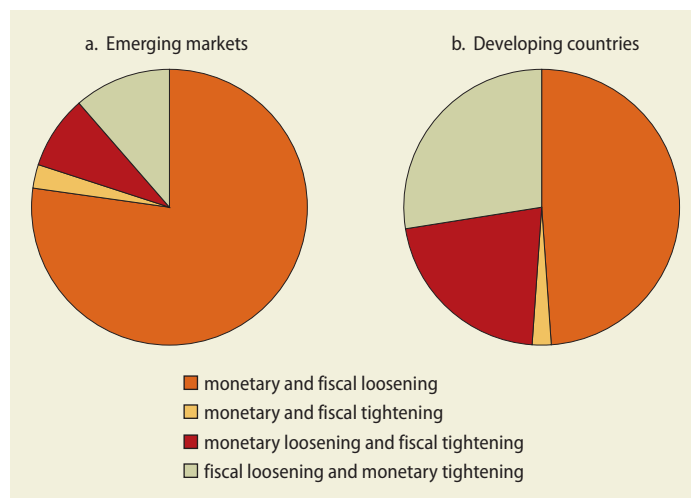
Source: IMF International Financial Statistics.
Note: Fiscal conditions are defined based on the change in government balance as a percent of GDP in 2008–09. Monetary conditions are based on the change in the MCI from 2008Q4 to 2009Q3.

A number of countries, however, are not in a position to delay adjustment and should act in 2010 to reduce fiscal deficits. In some cases, this reduction should be accompanied by a gradual tightening of the monetary policy stance. Three broad groups of countries can be distinguished.

Most developing countries financed widening budget deficits in 2009 by increasing reliance on domestic sources of financing. This financing policy, while appropriate when the global economy was facing the risks of a further sharp downturn, cannot be continued for very long, especially in countries with weak external payments positions, low reserves, or rapidly rising debt. Without higher aid inflows, financing constraints and the need to maintain fiscal sustainability will compel many countries to move to more prudent policies in 2010.

Some developing economies with fiscal sustainability problems may still be able to finance deficits in the current environment. But they could rapidly face external financing pressures if the perception takes hold that fiscal discipline is not a priority. If there are no signs of rising inflation, accommodating monetary policies can be maintained for some time to support domestic demand, unless strong downward pressures on the exchange rate (flexible regime) or reserves (fixed regime) emerge.

Several countries, mainly emerging economies, face high or rising rates of inflation. The economic dynamics underlying these phenomena differ from country to country. In several countries, the first signs of rising inflationary expectations are becoming visible in the context of exceptional macroeconomic policy support. In some other countries, inflation rates remained stubbornly high in 2009, notwithstanding depressed demand conditions, usually reflecting a lack of confidence in monetary policy. In both categories of countries, a move toward a more restrictive monetary and fiscal policy stance would be warranted.

Maintaining confidence in macroeconomic stability remains a priority for all countries. Credible medium-term fiscal adjustment plans are important to manage expectations by reducing the risks of crowding out and unsustainable debt dynamics. To maintain the ability of fiscal policy to respond to future crises, a preferable strategy would aim to reduce debt ratios to their precrisis levels in the medium term. In addition to phasing out temporary stimulus measures, this approach will require some emerging economies to make improvements in their structural primary balance.[8] To enhance confidence that future fiscal adjustment will not lead to an appreciable increase in the tax burden, the medium-term adjustment plans could emphasize the following elements.

- *Phasing out temporary stimulus measures while strengthening well-targeted social safety nets*. A large number of emerging and developing countries are supporting domestic activity with ad hoc measures, such as increased spending on public works or reductions in tax rates. Medium-term fiscal consolidation plans should envisage public investment at levels consistent with fiscal sustainability and available financing, and phase out tax reductions presented as temporary stimulus measures. At the same time, temporary social programs should be

BOX 3.1   **Quality of macroeconomic policies in low-income countries**

As in previous years, IMF staff conducted surveys among mission chiefs to gauge their assessments of the quality of macroeconomic policies in low-income countries. In 2009 low-income countries made good progress in the quality of monetary policies, a reflec-

tion of the rapid response to the global crisis in many countries and governance in the public sector. At the same time, governance in monetary and financial institutions showed deterioration, while little change was recorded in other areas.

a. Fiscal policy

b. Composition of public spending

c. Fiscal transparency

d. Monetary policy

e. Consistency of macroeconomic policy

f. Governance in monetary and financial institutions

g. Governance in the public sector

h. Access to foreign exchange

2003   2007   2008   2009
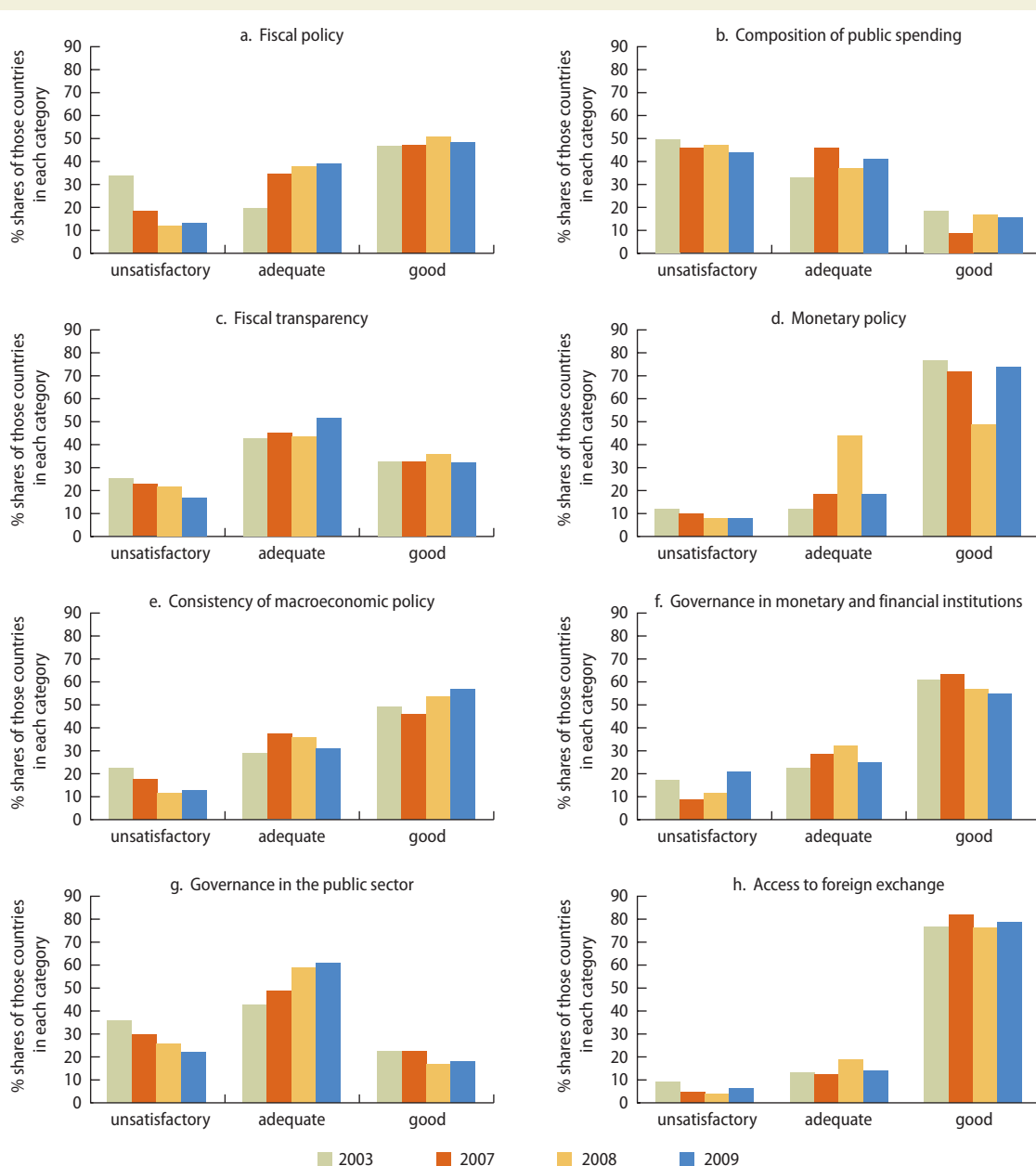
replaced with cost-effective, well-targeted, permanent social safety nets.

- *Structural cuts in nonpriority spending.* Governments should continue their efforts to reduce nonpriority spending, through further improvements in public financial management and by eliminating expenditure categories such as badly targeted fuel and food subsidies. Although the decline in food and fuel prices since mid-2008 has allowed some countries to reduce spending on inefficient general subsidies, further progress could be made in replacing general subsidies with programs better targeted to the poor.

- *Improving revenue performance.* Many emerging and developing countries have room for further improvements in tax systems and revenue administration, including measures aimed at widening the tax base to include informal sectors, further shifts away from trade taxes to domestic taxes, and addressing governance problems. Well-functioning revenue administrations, in combination with tax systems that minimize distortions, lay the basis for better revenue performance and create a more stable investment climate (box 3.2).

Countries with strong fiscal policies in the period leading to the global crisis have been better able to deal with its effects than countries with weak policies. They regained faster access to international financing on more favorable terms—and were better able to offset the effects of falling world demand with countercyclical fiscal policies in 2009 and 2010. This experience argues in favor of a countercyclical, medium-term fiscal rule that aims to generate savings during good years and create room for countercyclical policies during crisis periods. Although almost 60 emerging and developing countries have had some type of fiscal rule since the 1990s,[9] helping to maintain fiscal discipline, only some of these are designed to smooth out the effects of fluctuations in commodity export prices and other external shocks. Chile and Nigeria are countries where a countercyclical fiscal rule on the basis of prudent projections of commodity export prices

has helped to stabilize the macroeconomic effects of the crisis (box 3.3).

Strengthening international policy cooperation

The global crisis of confidence that eventually caused the collapse in world trade in 2008 required a global response: a simultaneous fiscal and monetary policy stimulus in countries with sufficient room to maneuver for such policies. The prospects of sustaining the current economic recovery will be enhanced if advanced, emerging, and developing countries continue to cooperate in the implementation of exit strategies and policies aimed at increasing growth. The agreement among the Group of Twenty (G-20) leaders at Pittsburgh to create a new process for mutual policy assessments is an important step in the right direction, but policy cooperation cannot be limited to those countries. Enhanced policy cooperation will be necessary in the following areas.

Avoiding protectionism. Restrictions on international trade and services, government subsidies for domestic industries, distortions to foreign direct investment, informal pressures on banks to give preference to domestic borrowers—all constitute serious threats to the economic recovery. Political pressures to maintain financial support to domestic industries indefinitely and to take more far-reaching protective measures could rise if unemployment remains relatively high in the coming years, in line with current expectations. Governments should eschew such protectionist policies and make strong efforts to reinvigorate the Doha Round. An ambitious Doha Round would constitute a major step toward a higher growth path for the world economy: a recent study puts potential annual GDP gains from multilateral trade liberalization at $300 billion to $700 billion.[10]

Increasing aid levels and aid effectiveness. Insufficient progress has been made in enhancing aid effectiveness, and aid still falls well short of the 2005 Gleneagles commitments, in particular for Africa. In addition, many donor countries have reduced their aid budgets, while others face pressures to reduce aid in light of

BOX 3.2   Mobilizing additional revenue in developing countries: Key issues for tax policy and revenue administration

The international financial crisis and its consequences for economic activity have put additional pressure on an already fragile revenue situation in many developing countries. Although the revenue situation in most countries is expected to improve as the effects of the crisis dissipate and temporary stimulus measures are phased out, some policy changes made in response to the crisis, and during the precrisis period that saw substantial increases in food and fuel prices, may have longer-term effects on revenues. An example is the proposed change to the value added tax (VAT) directive of the West African Economic and Monetary Union to allow for broader exemptions and a second (lower) rate on selected items. In addition, taxpayer compliance may have declined in many countries, posing challenges for revenue administration.

The policy tools that developing countries can mobilize to deal with the potential revenue loss stemming from the crisis and other ongoing challenges may be more limited today than in the 1980s and 1990s, and those that are left may involve stronger political commitments. The vast majority of countries have already implemented broad-based consumption taxes (typically VATs) at rates that are not particularly low in general and with bases that are generally narrow. Moreover, corporate tax rates have fallen dramatically since the early 1990s (by about one-quarter on average), and countries have intensified the use of tax incentives, further narrowing the tax base.

Country experiences in addressing these challenges differ, sometimes significantly, but common areas for reform exist.

Tax policy

Tax bases can be broadened, especially for VAT and profit taxes. This is not an issue of improving tax administration to better handle the informal sector (which is a separate and ongoing challenge); it primarily means rationalizing the use of income tax incentives (such as tax holidays) and reducing significantly the reliance on VAT exemptions as a (costly and largely ineffective) social policy tool.

The taxation of individuals is, in many countries, limited to the taxation of wages of the public sector and large enterprises. The taxation of unincorporated small and midsize enterprises remains largely elusive—both for technical and for political economy reasons. Addressing these issues is key to improving the equity of tax systems.

Some tax sources remain underexploited in many countries—excise taxes on alcohol and tobacco, and environmental taxes (fuel and car taxes, for example) are important examples.

The institutional framework for policy making, including coordination at the country level between the various government entities with responsibility for tax policy, is deficient in many developing countries and often leads to fragmentation of policy decisions with negative consequences for revenues— for example, between trade and tax policy, industrial and tax policy, and central and local taxation. Countries should better integrate tax policy making into macroeconomic management, and strengthen the coordination mechanisms across government entities.

Taxes on real property have historically yielded very little revenue for a number of reasons, including the lack of a proper framework for sharing taxation powers between central and regional levels of government. This revenue source remains underexploited in many developing countries.

Revenue administration

Tax agencies should also develop a strategy to enhance revenue administration. The primary objective of the strategy should be to contain the rise in noncompliance often observed during periods of crisis. If left unchecked, rising noncompliance could lead to substantial forgone revenue and provide unfair competitive advantages to noncompliant businesses.

To achieve this objective, the following four sets of measures could be considered.

- Assistance to taxpayers could be expanded by adjusting advance payments, accelerating tax refunds, and making greater use of payment extensions.
- Communication with the taxpayer population could be improved. An effective communication program for taxpayers and other key stakeholders in the tax system should aim at clearly conveying to stakeholders and the public the various elements of the tax agency's compliance strategy.
- Legislative reforms that facilitate revenue administration could be enacted. Needed reforms vary from country to country; they could include mea-

continued

BOX 3.2   (continued)

sures such as the strengthening of transfer-pricing rules or the introduction of default assessments and indirect audit methods.

Enforcement could be strengthened, including the reassessment of controls over the largest taxpayers, the intensification of arrears collection, securing tax withholding, giving greater attention to loss-reporting businesses, and enhancing the scrutiny of cross-border transactions and offshore evasion.

Early warning for shifts in taxpayer compliance is crucial for prevention. The sooner a tax agency can identify an increase in noncompliance, the faster it can respond. Few tax agencies, however, have the capacity to estimate the precise level of the overall tax gap. In this situation, tax agencies should identify and track compliance indicators that can be more easily measured, such as increases in late filing of tax returns and growth in tax arrears.

Government support for tax administration is critical. Like all government agencies, tax agencies face the prospect of declining budget allocations in an economic downturn as governments seek to create fiscal room for high-priority social expenditures. However, it should be recognized that the task of tax administration becomes more demanding during difficult economic times. In this situation, substantial cuts in tax agencies' budgets are likely to reduce the effectiveness of tax collection and further aggravate a decline in revenue.

Tax agencies should align their near-term compliance strategies and medium-term modernization plans. Sustaining revenue collection over the medium term will require tax agencies to address their most fundamental weaknesses (such as poor organizational and staffing arrangements, weak taxpayer services and enforcement programs, and outdated information systems). By their nature, such problems can be addressed only over the medium term, but in developing a compliance strategy for the economic crisis, tax agencies should not neglect their medium-term goals.

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tighter domestic fiscal constraints. These pressures must be resisted. A substantial increase in aid, at least in line with existing international commitments, is essential to allow developing countries, especially those in vulnerable debt situations and with limited alternative sources of finance, to generate resources for higher growth, improve social protection for the most vulnerable, and enhance food security.

The medium- and long-term economic effects of the crisis in low-income countries

Over the past few decades, a low-income country's growth rate in one decade has generally been a poor predictor of its growth rate in the next decade, while many policies and country characteristics are more stable. An emerging and vibrant empirical literature points to growth nonlinearities—accelerations (periods of high growth) and growth decelerations (periods of abrupt and severe growth slowdowns)—as an important development fact that until recently has not been in the spotlight.[11] Moreover, an extensive theoretical literature explores the possibility of low-income countries falling into prolonged periods of underdevelopment, commonly known as poverty traps.[12] Finally, crises can result in sharp declines in investment in education and health, declines that potentially can have long-lasting effects.[13]

Past growth

This section thus puts the current crisis in historical perspective and examines the prospects for growth in the medium to long run. Although the uncertainties are enormous, and the light that recent history can shed is limited, some preliminary and conditional answers are possible.

Transmission mechanisms from the global crisis seem to vary considerably across countries. While advanced economies have primarily suffered a financial and banking crisis, most developing countries primarily were hit by an external demand effect, although some, nota-

BOX 3.3   **A fiscal rule for commodity exporters: The cases of Chile and Nigeria**

Several commodity exporters have in recent years adopted medium-term frameworks for fiscal policy aimed at reducing the impact of commodity price fluctuations on the domestic economy. These frameworks allowed countries to build up sizable reserves during the commodity price boom of 2007–08, helped to stabilize expenditures, and created additional space for countercyclical policies in 2009. Chile and Nigeria illustrate the benefits of such a fiscal rule.

Since the beginning of the decade, fiscal policies in Chile have been based on a structural fiscal surplus rule aimed at mitigating the effects of fluctuations in prices for copper and molybdenum, the country's main commodity exports. Each year, the authorities make a calculation of structural revenue, consistent with potential GDP and long-term projections of copper and molybdenum prices. The annual spending budget is set on the basis of total structural tax and nontax (mainly mining) revenue minus a structural surplus. Fiscal surpluses are used to feed two sovereign wealth funds established under the 2006 Fiscal Responsibility Law: the Pension Reserve Fund to cover the government's long-term pension liabilities; and the Economic and Social Stabilization Fund, established to smooth fiscal expenditure and finance regular or extraordinary public debt amortization. The consistent implementation of the fiscal rule, which has received broad public support, and the sovereign wealth funds have served Chile well in recent years. Rising copper prices since the middle of the decade have allowed Chile to accumulate substantial reserves in the Economic and Social Stabili-

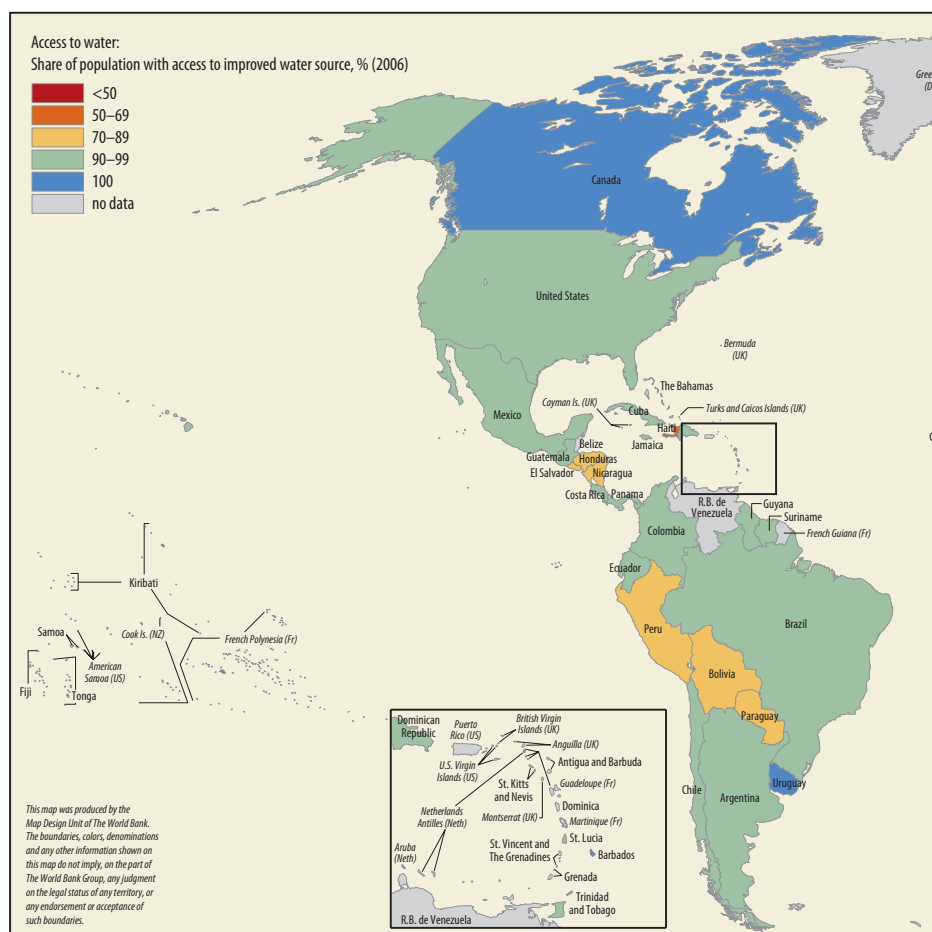zation Fund, creating a comfortable buffer to offset the sharp revenue declines in 2009.

Nigeria introduced an oil-price-based fiscal rule in 2004 as a framework for the annual budget process, which was subsequently formalized in the 2007 Fiscal Responsibility Act. In the annual Medium-Term Fiscal Strategy presented to parliament, expenditures are set on the basis of relatively prudent projections for oil prices and production. If actual oil revenues exceed the budgeted levels, the surpluses are transferred to accounts held by the federal, state, and local governments at the central bank according to a preset intergovernmental sharing formula. Balances accumulated in the accounts can be used as a source of budget financing at the various levels of government if the actual oil price falls below the reference price for three consecutive months.

The fiscal rule is supported by a limit on the federal government's fiscal deficit of 3 percent of GDP, enshrined in the Fiscal Responsibility Act. The fiscal rule helped Nigeria stabilize expenditures and accumulate sizable reserves during the oil price boom of 2007–08. Although the political backing for the new approach does not seem to be as strong as in Chile, and lower levels of government are not bound by the Fiscal Responsibility Act, the fiscal rule has served Nigeria well thus far. Notwithstanding extraordinary distributions from the central bank accounts in response to political pressures during the oil price boom, Nigeria accumulated sufficient resources to avoid a contraction of public spending in 2009, reducing the effects of the global economic downturn.
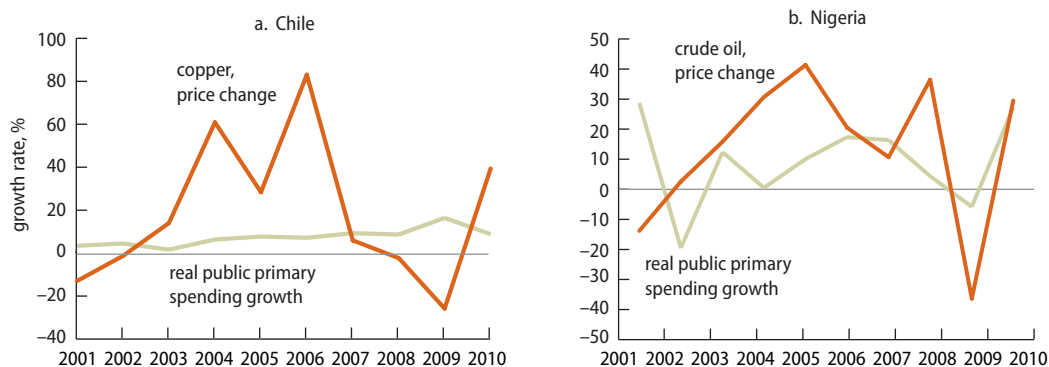
Source: World Economic Outlook.

MAP 3.2   Across the world, 884 million people lack access to safe water—84 percent of them in rural areas

Access to water:
Share of population with access to improved water source, % (2006)

	<50
	50–69
	70–89
	90–99
	100
	no data

This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

Source: World Economic Indicators.

bly fuel exporters, were also hit by a terms-of-trade and, perhaps to a lesser extent, a capital flows effect. From a methodological point of view, this difference is quite important because these types of external shocks are more familiar to low-income countries than the financial shock is to advanced countries, therefore permitting a more credible historical analysis of the effects in low-income countries.

The historical analysis that follows focuses on external demand, terms of trade, and capital flows as the three main transmission mechanisms of the crisis affecting low-income

countries.[14] The analysis consists of four exercises, each tackling the importance of external shocks from a slightly different angle. The first is a simple event study that illustrates the growth paths of past crises and compares these to the current crisis. The second and third exercises focus on the medium-run effects of the crisis. Specifically, an impulse response analysis (a time-series analysis) is employed to estimate the effects over time, complemented with five-year growth panel regressions. The last exercise is concerned with the longer-run implications of the crisis using recently devel-

oped methods to capture possible sharp and very persistent drops in growth rates.
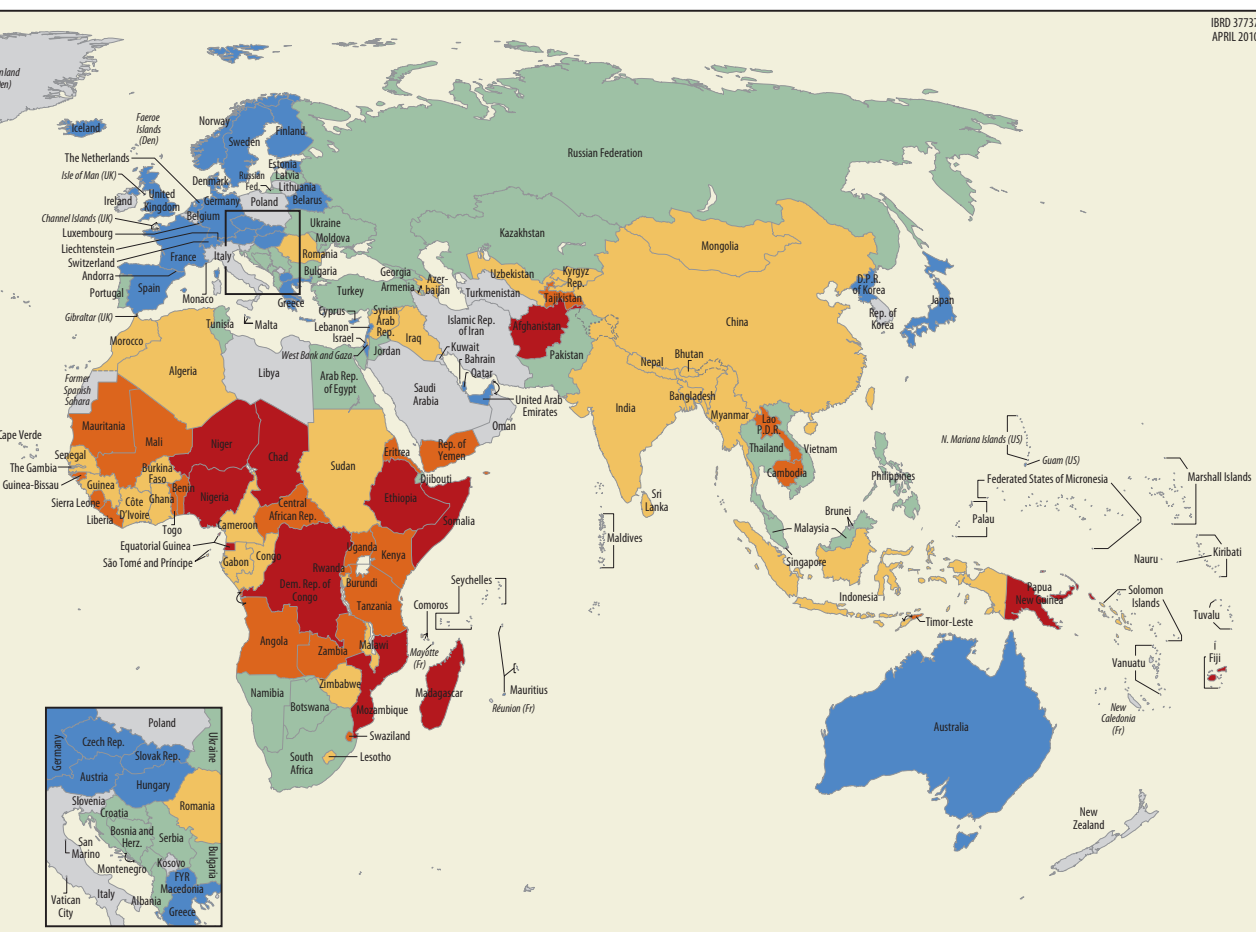
Global shocks

In past global crises, growth declined sharply leading toward the crisis year, but low-income countries experienced the worst of the crises about a year after the global low point was reached (figure 3.18). In addition, recovery seemed to be faster in the world economy than in low-income countries. More precisely, while recovery in the world began almost im-

mediately after the crisis year, it took about three years for a turnaround to take place in low-income countries in previous global crises. The good news is that low-income countries have tended to recover fully in the sense that they have reached or surpassed their precrisis growth rate after about five years.

The current crisis is distinguished by more synchronization between low-income countries and global cyclical growth movement. Also, IMF forecasts imply a more rapid V-shape recovery path out of the recession than in previous crises.

FIGURE 3.18   **After previous crises, low-income countries recovered more slowly than the world economy**
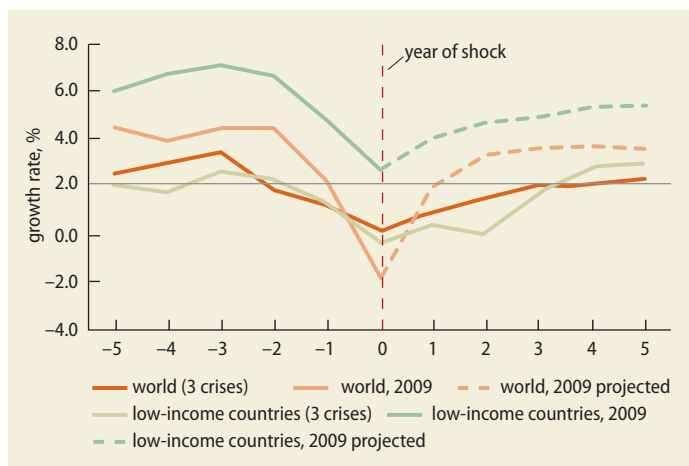
Source: IMF staff calculations.
Note: The figure plots the average per capita GDP growth in the world and in low-income countries five years before and five years after the global crises (centered at zero on the horizontal axis) of 1975, 1982, and 1991, and the current crisis. Also shown in dashed lines are IMF projections until 2013.

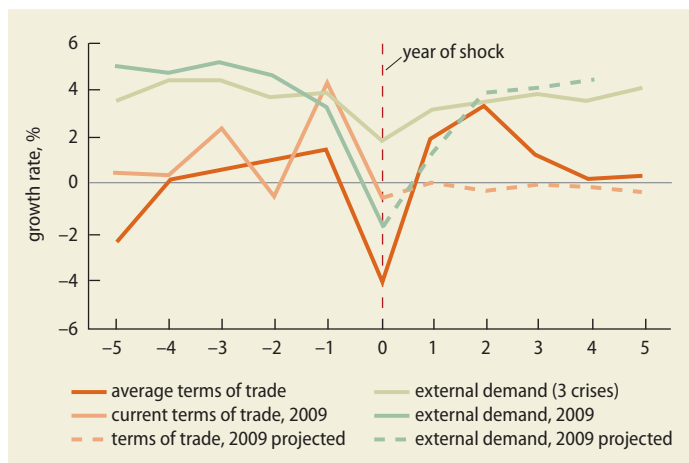**FIGURE 3.19**   **Growth of terms of trade and external demand in low-income countries in past and current crises**

Source: IMF staff calculations.
Note: The figure plots the terms of trade and external demand growth in low-income countries five years before and five years after the global crises (centered at zero on the horizontal axis) of 1975, 1982, and 1991, and the current crisis. Also shown in dashed lines are IMF projections until 2013.

Unlike previous crises in which terms-of-trade growth suffered a sharp downturn relative to external demand growth, the current crisis is characterized by a sharp decline in export demand, with terms-of-trade growth

on average moving around historical averages (figure 3.19).[15]

Persistence of output loss over time using time series or impulse response analysis

An impulse response function analysis, as in Cerra and Saxena (2008), examines whether terms of trade and external demand have historically been associated with severe output losses and whether such output losses have been permanent in low-income countries.[16] Figure 3.20 presents impulse responses of output losses, measured as the percentage change from a linear growth trend to a terms-of-trade shock and an external demand shock, respectively.[17] The solid orange line is the mean of output loss, and the dashed lines reflect one standard deviation from the mean. A key assumption is that countries will eventually return to the growth rate existing before the shock. This assumption is quite reasonable because most of the low-income countries considered in these exercises tend to revert to their preexisting growth trend in the five years following the shock.

The main message is that the impact on output is negative and highly persistent under both types of shock, but especially under external demand shocks. Output losses continue to rise without a sign of a reversal even 10 years after an external demand shock, mounting to a cumulative loss of over 6 percent of GDP. This result may stem from interactions of external demand shocks with private and public investment decisions or policy responses. The output loss path eventually becomes flat as growth reaches its precrisis rate. But after a decade, lower growth and a substantial loss of output is likely to have detrimental effects on tax revenues, income, and certainly welfare.

The impulse response analysis is replicated for Sub-Saharan Africa (figure 3.21). One notable difference is that terms-of-trade shocks seem to have had a larger and more persistent effect than external demand shocks in the rest of low-income countries. Many Sub-Saharan countries are commodity exporters, particularly fuel exporters, and are thus more prone to

FIGURE 3.20 **Output losses are highly persistent, especially under external demand shocks**

a. Terms of trade, low-income countries

b. External demand, low-income countries
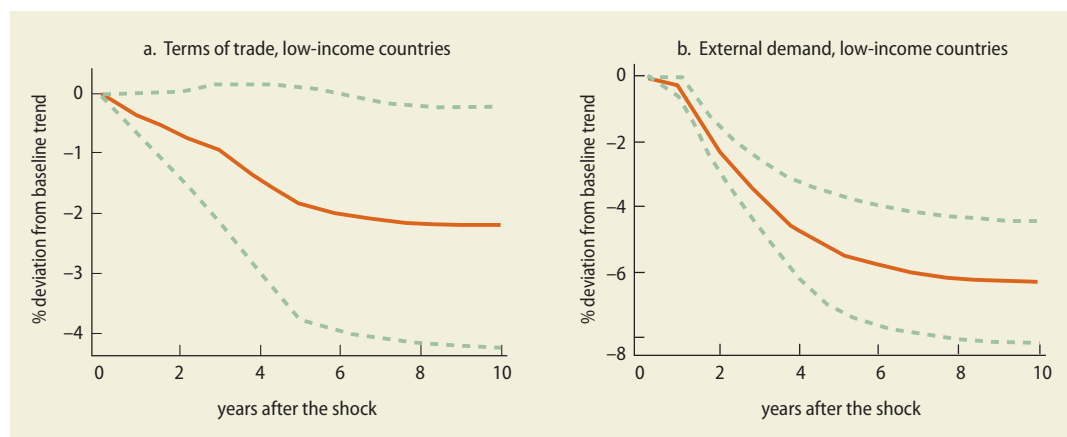
Source: IMF staff calculations.
Note: Impulse response of output loss in low-income countries to terms-of-trade and external demand shocks. Dashed lines are 1 standard deviation from the mean output loss.

FIGURE 3.21 **In Sub-Saharan Africa terms-of-trade shocks have larger and more persistent effects**

a. Terms of trade, Sub-Saharan Africa

b. External demand, Sub-Saharan Africa
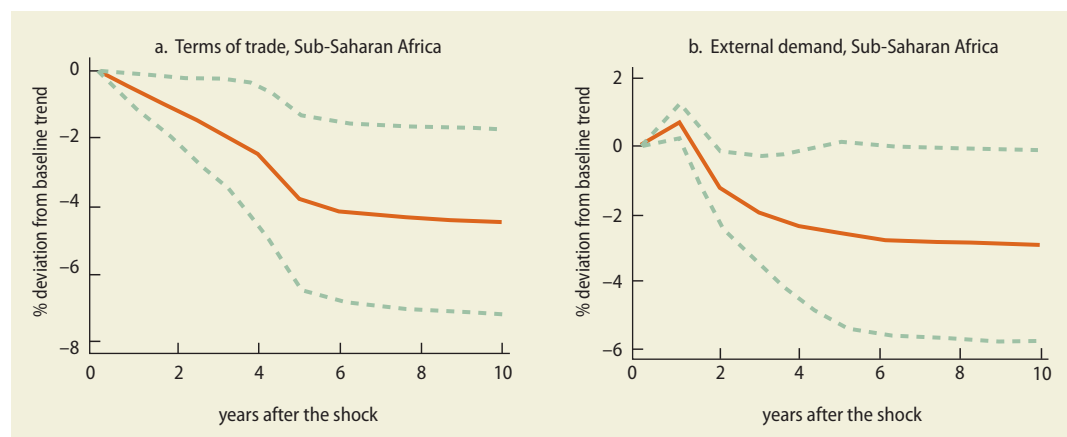
Source: IMF staff calculations.
Note: Impulse response of output loss in Sub-Saharan Africa countries to terms-of-trade and external demand shocks. Dashed lines are 1 standard deviation from the mean output loss.

terms-of-trade shocks. This issue is explained further below regarding growth downbreak.

Regression analysis

A third exercise employs five-year panel growth regressions as an alternative approach to investigating the impact of terms-of-trade, external demand, and foreign direct investment (FDI) shocks on medium-term per capita GDP growth.[18] In particular, the estimation re-

sults are based on panel regressions that combine time-series and cross-country information,[19] and the sample is restricted to nonfuel exporters. Fuel exporters are excluded from the baseline sample because these countries' growth experience has been heavily influenced by external demand for fuel. In the baseline specification, per capita growth is regressed on lagged per capita GDP growth, and the three shock variables (growth in terms of trade and external demand and the lag of the difference

TABLE 3.4   Growth regression results

	Entire time period			Before 1989			After 1989		
	(1)	(2) Low-income countries, non-fuel	(3) Other countries, non-fuel	(4)	(5) Low-income countries, non-fuel	(6) Other countries, non-fuel	(7)	(8) Low-income countries, non-fuel	(9) Other countries, non-fuel
Variables	All			All			All		
Lagged growth	−0.209***	−0.167**	−0.237**	−0.577***	−0.487***	−0.662***	−0.292***	−0.287***	−0.261***
	(0.066)	(0.077)	(0.095)	(0.092)	(0.096)	(0.110)	(0.063)	(0.080)	(0.083)
Growth in terms of trade	0.123***	0.115*	0.111**	0.031	0.030	0.023	0.156**	0.131*	0.182***
	(0.047)	(0.064)	(0.053)	(0.028)	(0.046)	(0.028)	(0.063)	(0.077)	(0.066)
Growth in external demand	2.603***	1.960***	3.419***	1.332**	0.617	2.599**	1.727***	1.665*	1.769**
	(0.606)	(0.736)	(0.786)	(0.609)	(0.599)	(1.135)	(0.666)	(0.938)	(0.706)
Lagged change in (FDI / GDP)	0.631***	0.221	1.010***	0.599	−0.404	1.773***	0.783***	0.517*	0.953***
	(0.187)	(0.222)	(0.270)	(0.633)	(0.732)	(0.528)	(0.243)	(0.305)	(0.319)
Observations	529	281	248	181	92	89	348	189	159
Number of countries	88	48	40	86	47	39	88	48	40

Source: IMF staff calculations
Robust standard errors in parentheses
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

in FDI-to-GDP ratio) are all measured in five-year averages.[20] Columns 1–3 in table 3.4 present results for "All" nonadvanced nonfuel countries, nonfuel low-income countries, and nonfuel non-low-income countries. The comparison between low-income countries and non-low-income countries is intended to provide some insights into the differential effects of these shocks to the two income groups.
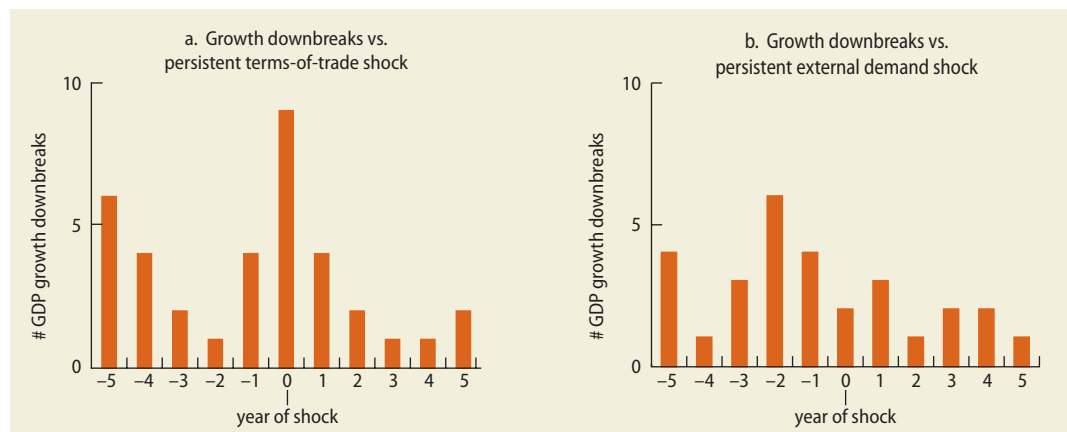
For low-income countries, terms-of-trade growth and external demand growth obtain positive and significant coefficient estimates, indicating a positive impact on medium-term growth (column 2 of table 3.4). While the coefficient estimate on FDI for low-income countries using the entire time period in the sample is insignificant, it is highly significant for "All" and non-low-income countries along with the coefficient estimates for terms of trade and external demand (columns 1 and 3, respectively). Columns (4–9) present results from splitting the sample in the periods before and after 1989 (the median year in the sample). Coincidentally, "after 1989" is the period when growth increased dramatically in most low-income countries. Note that most of the effect of terms-of-trade and external demand growth for low-income countries has been driven by variation in the period after 1989 (columns 5 and 8). Even more notable is that in the post-1989 sample the FDI coef-

ficient becomes positive and significant. That may not be surprising given that FDI in low-income countries has been plentiful only in the past decade or so.[21] The broad message of this exercise is that regression results seem to reinforce the impulse response findings showing economically significant effects of the shocks in the medium run.

Growth downbreaks

The analysis shows that external demand shocks, such as those faced by low-income countries in 2009, cause growth to slow down not just immediately but for several years. An even greater concern, though, is the risk that the global crisis may cause an essentially permanent decline in growth in many low-income countries—that is, a growth "downbreak." Many low-income countries have enjoyed relatively strong growth over the past 10–15 years, when a favorable external environment prevailed. The concern is that, with the global shock, this could change. Underlying this concern is the observation that, whereas output paths in the advanced countries tend to be reasonably steady, in developing countries they are often characterized by "mountains, cliffs, and plains."[22] This exercise employs the methodology by Berg, Ostry, and Zettelmeyer (2008) to obtain growth downbreaks (sus-

FIGURE 3.22   **In low-income countries, growth downbreaks are more associated with terms-of-trade shocks, giving hope for smoother recovery**

Source: Berg and others forthcoming.
Note: The left panel plots the number of GDP growth downbreaks in a large sample of low-income countries during the periods leading up to and following a large persistent terms-of-trade shock (year 0 on the horizontal axis). A large persistent terms-of-trade shock is defined as the worst 10 percent of the distribution of all terms-of-trade shocks, measured as the difference of the average three-year terms-of-trade growth before and after a year of shock. The right panel is the same, except that the shock is to external demand, measured as partner-country real growth weighted by export shares.

tained declines in the rate of growth) in low-income countries and to explore whether terms-of-trade and external demand shocks are correlated with such "cliffs."

One pattern emerging from figure 3.22 is that persistent negative terms-of-trade shocks have often coincided with growth downbreaks in the past. However, persistent negative partner-country demand shocks have shown no association with growth downbreaks. This phenomenon may be related to the fact that terms-of-trade changes are usually strongest in commodity sectors, and that these sectors often find it more difficult to adjust to the new environment than do, for instance, industrial sectors. The supply factors that produce the commodities in question cannot easily switch to other uses, such as satisfying domestic demand or finding other export markets. The resulting decline in foreign income could squeeze imports and activity persistently, thus impeding productive activities throughout the economy.

This remarkable observation suggests that if indeed the current crisis has affected primarily low-income countries through external demand and not through terms of trade, there may be more reason for hope for a smoother recovery.[23]

Notes

1. In this chapter, the group of developing countries includes mainly low-income countries and some middle-income countries that are not considered emerging economies. High-income oil-exporting countries are excluded from this category.
2. IMF 2009g, box 1.2; IMF 2009d.
3. The adequacy of reserves depends on many factors, including the volatility of exports and imports, fluctuations in the terms of trade, the level and maturity structure of external debt, and the vulnerability to sudden shifts in international capital movements. While reserve adequacy should be assessed country by country, a level equivalent to three months of imports is often used as a rule of thumb, especially for low-income countries. For a discussion on optimal reserve determination, with a focus on low-income countries, see Drummond and Dhasmana (2008).
4. The evolution of monetary policy stance is approximated by the Monetary Conditions Index (MCI), a summary indicator of the impact of policy rates and exchange rates on domestic demand. The MCI combines nominal short-term interest rates and the nominal effective exchange rate (with a one-third weight for the latter) in a single index. The change in the indicator is calculated up to 2009Q3, except for

Vietnam and Rwanda, which have data only until 2009Q1. The MCI is a useful indicator of direction in the monetary policy stance: it is simple to calculate and based on data readily available. However, it also suffers from various caveats (including, for example, the use of common weights across diverse countries), so detailed country results need to be interpreted with some caution.

5. In many countries that reduced rates in 2009, inflation came down faster than nominal rates, propping up real interest rates. Temporary factors, such as commodity price movements, may have contributed to the fall in inflation, however, mitigating the impact of higher real rates on spending and investment decisions.

6. See IMF 2009e and Baldacci and Kumar, forthcoming. An increase in fiscal deficits of 1 percent of GDP is found to increase 10-year nominal bond yields by about 20 basis points in the medium term, and an increase in the debt-to-GDP ratio of 1 percent increases rates by approximately 5 basis points. Although the econometric analysis is based on a sample of advanced and emerging economies, it is plausible that low-income countries show similar relations between deficits, debt, and interest rates.

7. For a detailed discussion of exit strategies see IMF 2010a.

8. IMF 2010b.

9. IMF 2009a.

10. This represents approximately 0.5–1.2 percent of 2008 world GDP. See Adler and others (2009).

11. Hausmann, Pritchett, and Rodrik 2005; and Berg, Ostry, and Zettelmeyer 2008.

12. See the literature review in Azariadis and Stachurski (2007) and more specifically the debt trap model in Kehoe and Levine (1993).

13. Benhabib and Spiegel 1994; Krueger and Lindahl 2001.

14. Data are from IMF. External demand is partner-country real GDP growth, 2000 = 100, weighted by trade exports to all partner countries (APR 2009 Global Economic Environment). Terms of trade are for goods (World Economic Outlook [WEO] latest update). Capital flows are proxied by direct investment in reporting economy in billions of U.S. dollars.

15. Data on foreign direct investment were not available to produce a similar plot. This observation is also shown in more formal growth regression analysis in Berg and others (work in progress).

16. Daniel Leigh very helpfully provided his Stata code and invaluable input. For methodological details, see Cerra and Saxena (2008) and IMF 2009g, ch. 4.

17. The shock dummy variable for both terms of trade and external demand was constructed as follows: A restricted sample was constructed in which values below and above the 1st and 99th percentiles were excluded to mitigate the effects from extreme values. The crisis periods belong to the left tail of the moving-average growth (based in two periods) distribution, where the left tail is based on one standard deviation of the restricted sample defined above. Results are qualitatively similar to two alternative shock definitions considered.

18. A similar estimation methodology was followed in Drummond and Ramirez (2009).

19. Using a statistical estimation method called generalized method of moments (GMM).

20. An alternative growth regression specification would be the Barro-Solow type regression. This alternative was not considered, because it suffers from the well-documented endogeneity and omitted variable problems, which the specification used here is less subject to.

21. The robustness of these results to alternative specifications and subsamples has been checked.

22. Pritchett 2000.

23. The definitions of "persistent" and "large" can be found in the note to figure 3.22. It turns out that large negative external demand shocks such as those experienced by many countries in 2009 are not unprecedented for many low-income countries. In the sample used for figure 3.22, there were 68 instances in which countries faced external demand shocks larger than they faced in 2009 (assuming IMF projections for the out-years).

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4

Outlook for the Millennium Development Goals

ow will the global economic crisis alter precrisis trends in the Millennium Development Goals (MDGs)? With only five years left until the target date of 2015, it is obvious that several of the MDGs will not be attained, globally or by a majority of countries. Many of the goals are too high for low-income countries, given their low starting points. Many countries, including low-income ones, have seen substantial gains in recent years, however, and entered the current crisis in a stronger position than in past crises (chapters 1 and 2). Important questions are whether the gains will be preserved, and what happens if the fragile recovery slips into a prolonged stagnation.

The crisis is likely to have a lasting impact on human development indicators that will not overcome even a robust economic recovery. Although growth in emerging and developing countries is currently accelerating, should growth slow or deteriorate, progress toward the MDGs will suffer even more. A decline in growth would have a significant impact on poverty and undernourishment. The impact of a growth slowdown on some of the other MDG indicators analyzed is more muted, although the cost in absolute

numbers—additional children dying or uneducated, additional people left without clean water—could be large because of the size of the population underlying each rate. Countries can achieve better development outcomes through improved policies, most notably shifts in expenditures, increases in domestic revenue, and better service delivery. Stronger policies are unlikely to compensate fully for the deterioration in human development indicators that result from slower growth, however. In the current context, better development outcomes will thus depend on the speed at which the global economic recovery supports increases in developing countries' export revenues and external finance.

This chapter looks at these issues in two ways. It first presents alternative scenarios for progress on some key human development–related MDGs based solely on different forecasts of GDP growth, with the results aggregated by regions. This relatively limited approach provides a general sense of the impact of the crisis and the potential envelope for the MDGs looking ahead over the next five to ten years. The second part of the chapter then takes into account a broader

set of determinants of progress in the MDGs, including fiscal policy (public expenditures and their composition plus revenue efforts), export revenues, terms of trade, aid flows, remittances, and foreign borrowing. This richer analysis allows a much more robust view of how the external economic environment and developing-country policies will affect progress toward the MDGs. The scope of the analysis, however, and the variables involved, make it extremely difficult to provide comprehensive forecasts of human development indicators for developing countries. Instead, this section illuminates the channels that influence MDG outcomes through the lens of two types of low-income developing-country structure based on natural endowments—those that are resource poor and those that are resource rich.[1]

Forward analysis of the MDGs

The original analytical framework underpinning the assessment of policies as developed by the World Bank and the International Monetary Fund (IMF) in the first *Global Monitoring Report* in 2004 remains very valid today for organizing this policy assessment (figure 4.1). The two key pillars for achieving the development outcomes are economic growth and delivery of services to the poor—the very two factors likely to be most affected by global economic crisis. That is why the lessons of history regarding the effects of growth decelerations on various human development indicators are examined in chapter 2. Although not the only driver, growth will likewise be a key factor in projecting the postcrisis trends for the MDGs. The other key factor, effective service delivery, is difficult to assess even in the best of circumstances.[2]

The current crisis has resulted in a deterioration in human development indicators that will have important future effects even with a robust economic recovery. If growth were to stagnate or slow, the impact on human welfare in developing countries would be severe. Projecting the aggregate outlook for the MDGs is fraught with difficulties (box 4.1).[3] Nevertheless, it is essential to assess where things stand in the aftermath of the crisis, as developing countries enter a new and less favorable external environment.

The alternative scenarios of progress toward the MDGs presented here are based on a simplified reduced-form analysis linking economic growth—the key variable of the crisis and the recovery scenarios—to the MDG indicators.[4] The simulations are based

FIGURE 4.1 Framework linking policies and actions with development outcomes
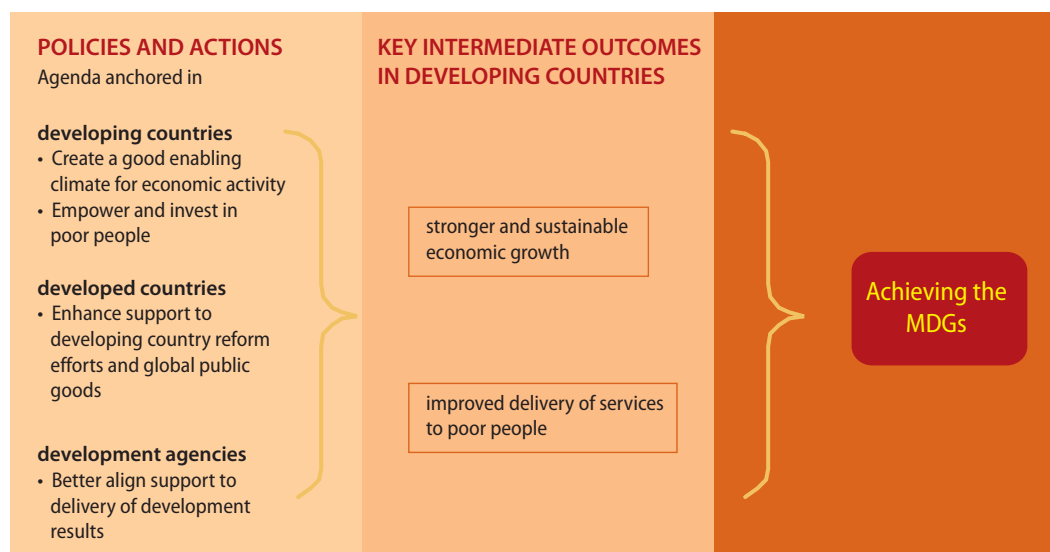
Source: World Bank 2004a.

BOX 4.1   **Uncertainty and risk in projecting attainment of the MDGs**

There are many uncertainties and risks in projecting development outcomes. One is the strength and timing of the economic recovery. Another is the complexity of the relationships between the MDGs and their determinants, which are still poorly understood. Among the MDGs the impact of economic performance on poverty is better established, although the elasticity of poverty to growth can vary with country circumstances and initial conditions. Furthermore, human development outcomes are influenced by a wide range of factors, including the evolution of household incomes and public resources, as well as the consequences of supply and demand for policies, institutional actions, and microlevel services. Given the complexity and differing assumptions about the recovery, assessments of human development outcomes can be wide ranging.

Another important uncertainty in forecasting progress toward the MDGs is fiscal adjustment—public expenditures and their composition are key determinants of human development indicators in low-income countries. A deterioration in the macroeconomic environment may reduce government income, thus endangering public expenditures essential for progress toward the MDGs. However, aid, external borrowing, and international reserves may provide the fiscal space needed to protect social spending, while remittances may help to support private expenditures. Hence, fiscal adjustment and thus the implications of slower growth for the MDGs will vary from country to country depending on circumstances and conditions entering the crisis.
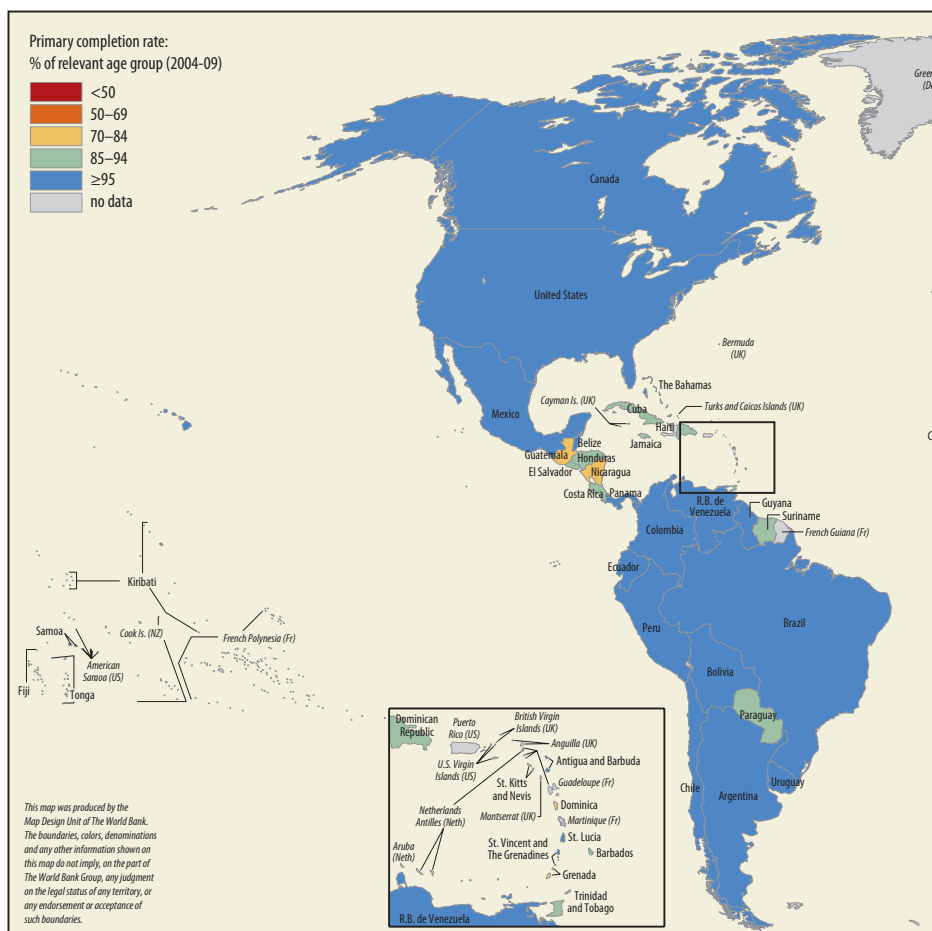
Several studies point to other problems in accounting for all of the influences on human development indicators. An increase in public expenditures does not necessarily improve education and health outcomes; nor does economic growth alone. Links between public expenditures and social sector outcomes are weak. Supply-side factors associated with effective service delivery are preconditions for improving basic service provision—school facilities, books, health clinics, vaccination programs, qualified teachers and health staff, and the like. Client demand for services and various other factors at the local level—household incomes, distance and opportunity costs, voice and participation of clients, educational attainment of mothers, corruption, and cultural and religious norms—also matter and may vary by community. The empirical regularity of these potential determinants can become difficult to establish at the country, regional, and global levels.

Source: Dinh, Adugna, and Myers 2002; Adams and Bevan 2000; Filmer, Hammer, and Pritchett 2000, 2002; Devarajan and Reinikka 2004; World Bank 2004.

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on GDP growth because it is a major determinant of progress toward the MDGs, and it is the only determinant that is projected for a large group of countries and that is anchored by the short-, medium-, and long-term economic outlook in the International Monetary Fund's (IMF) *World Economic Outlook* and the long-term growth projections that underpin the World Bank's *Global Economic Prospects*. Because of the many uncertainties described in box 4.1, these projections relating progress in the MDGs to alternative scenarios for GDP growth are necessarily subject to large margins of error and should be taken as illustrative.

The estimated relationship between poverty and growth is based on household surveys in more than 100 countries and assumes that the underlying income or expenditure distribution is relatively stable during changes in economic growth.[5] The poverty analysis brings 31 new household surveys to the 2010 *Global Monitoring Report* and new projections of per capita income growth in the aftermath of the crisis. The analysis also considers four other MDGs—primary education completion, infant mortality, gender equality in education, and access to clean water—for which aggregate quantitative analysis is currently feasible (future reports will expand the analysis to other MDGs). The relationship between GDP growth and each indicator is estimated for each country.

MAP 4.1   In 2007, 72 million children worldwide were denied access to education

Primary completion rate:
% of relevant age group (2004-09)

- <50
- 50–69
- 70–84
- 85–94
- ≥95
- no data

This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

Source: World Development Indicators.

The results show that growth generally was significantly related to progress in the human development indicators. However, confirming all the caveats mentioned above, the estimations using growth alone accounted for only 30–40 percent of past variations of the MDG indicators across countries and time. These coefficients were then used to forecast each MDG indicator for each country, based on alternative scenarios for GDP growth. Although it is certainly possible to include other determinants of the MDG indicators in the estimation, it is not practical to forecast these other indicators on a country-by-country basis (box 4.2).

Three global scenarios for progress on human development–related MDGs

Three global scenarios for GDP growth address the risks of the current global economic crisis: a postcrisis trend; a high-growth or precrisis trend; and a low-growth scenario.

The postcrisis trend assumes a relatively rapid economic recovery in 2010, with strong growth continuing into the future, as described in chapter 2.[6] This is essentially the base case forecast for growth in developing countries after the crisis.

The precrisis trend gives the forecast path for the MDGs if developing countries had continued their impressive growth performance during 2000–07, the period just before the global economic crisis. The impact of the crisis on the MDGs can thus be measured by comparing the postcrisis trend with this one.

The low-growth scenario assumes that the recovery projected for the postcrisis trend will not take place in the medium run. The scenario assumes little or no growth for about five years, when it begins to slowly recover. This scenario follows the pattern of past responses to severe external shocks in developing countries.

The impact on the very poor

Recent economic shocks have taken a toll on the poor. The crisis left an estimated 50 million more people in extreme poverty in 2009, and some 64 million more will fall into that category by the end of 2010 relative to a precrisis trend.[7] New estimates suggest that the large global spike in food prices in 2008 may have led the incidence of undernourishment to rise by around 63 million people, while

BOX 4.2   Estimating the impact of growth on human development indicators

The relationship between GDP growth and the MDGs was estimated taking into account a policy index reflecting the country's level of policy and institutions plus a set of initial conditions (for example, adult female literacy rate, urbanization, ethnic fractionalization, level of income, and location by geographical region).[a] Several policy indexes had a significant relationship with the MDG indicators. Among these, the World Bank's Country Policy and Institutional Assessment (CPIA) rating was selected because it is a broader measure than one based solely on governance indexes. It covers economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions. The explanatory power of the equations

jumps from 30–40 percent using growth as the sole explanatory variable to 80 percent when the index of policy and initial conditions are taken into account. These estimations help to refine the understanding of the relationship between growth and the human development indicators. However, it did not prove possible to use the policy index or the initial conditions in the alternative scenarios for future progress in the MDG indicators, given the difficulties involved in forecasting these variables in many countries.

a. The use of the policy index is similar to the empirical works of Wagstaff and Claeson (2004), Rajkumar and Swaroop (2002), and Filmer and Pritchett (1999). The CPIA is available in the *World Development Indicators*.

the crisis itself may have led to an additional 41.3 million undernourished people, or 4.4 percent more undernourished people in 2009 than would have been the case without the economic crisis.[8]

A rapid economic recovery (the postcrisis trend) would improve the situation for many of the extremely poor and lead to substantial

reductions in the poverty rate, to 15 percent in 2015, well below the MDG target of 20.4 percent (table 4.1). Nevertheless, the crisis has imposed a lasting cost on poverty reduction. Had the crisis not interrupted the rapid economic progress made by developing countries through 2007 (the precrisis trend), the poverty rate at $1.25 a day would have fallen to

TABLE 4.1   Poverty in developing countries, alternative scenarios, 1990–2020

Region and scenario	1990	2005	2015	2020
Global level				
Percentage of the population living on less than $1.25 a day				
Postcrisis	41.7	25.2	15.0	12.8
Precrisis	41.7	25.2	14.1	11.7
Low-growth	41.7	25.2	18.5	16.3
Number of people living on less than $1.25 a day (millions)				
Postcrisis	1,817	1,371	918	826
Precrisis	1,817	1,371	865	755
Low-growth	1,817	1,371	1132	1053
Sub-Saharan Africa				
Percentage of the population living on less than $1.25 a day				
Postcrisis	57.6	50.9	38.0	32.8
Precrisis	57.6	50.9	35.9	29.9
Low-growth	57.6	50.9	43.8	39.9
Number of people living on less than $1.25 a day (millions)				
Postcrisis	296	387	366	352
Precrisis	296	387	346	321
Low-growth	296	387	421	428

Source: World Bank staff calculations using the PovcalNet database.

about 14 percent by 2015, implying that an additional 53 million people would have been lifted out of extreme poverty. Things could be worse than the postcrisis trend, however. If the economic outlook deteriorates to the low-growth scenario, the poverty rate could fall only to 18.5 percent, with an additional 214 million people living in absolute poverty by 2015 (relative to the postcrisis trend).

On current or postcrisis growth trends, poverty in Sub-Saharan Africa is projected to drop to 38 percent by 2015—more than 9 percentage points short of its target. Before the crisis the region had been on a path to reach a poverty rate of 35.9 percent, which would have lifted another 20 million people out of poverty by 2015. If growth stagnates into the low-growth scenario, the trend gap could more than double, implying an additional 55 million people remaining in extreme poverty by 2015.

The long-term nature of the cumulative effects becomes clearer when global projections are extended 10 years forward. The postcrisis trend suggests that by 2020, 826 million people (12.8 percent) in developing countries will be living on less than $1.25 a day, implying that 71 million more people will be living in absolute poverty in 2020 as a result of the crisis. The low-growth scenario would result in a rise of 227 million living in absolute poverty compared with the postcrisis trend. The corresponding increases in poverty for Sub-Saharan Africa in 2020 are 31 million more people in poverty for the postcrisis trend and 76 million more for the low-growth scenario. The five additional years would leave Sub-Saharan Africa still short of halving poverty, the MDG target for 2015.

Poverty rates vary considerably among the other regions (annex tables 4A.1 and 4A.2). Even in the low-growth scenario, the East Asia and Pacific region more than meets its poverty target, in large part because of China's success in reducing poverty. South Asia, on the strength of India's achievement, meets the poverty target in the postcrisis trend but not in the low-growth scenario. Middle-income countries in Europe and Central Asia

are projected to miss the poverty reduction MDG at poverty lines of both $1.25 and $2 a day. However, the poverty rates in these countries are very low to start with (about 4 percent at $1.25 a day and about 9 percent at $2 a day in 2005), so a higher poverty line of $4 to $5 a day is more meaningful for this group of countries.

Overall, the projection for the $2 a day poverty threshold is less promising. In the postcrisis trend, 2 billion people, or one-third of the population of developing countries—more than half of the 1990s level—remain in poverty at $2 a day.

Impact on selected human development indicators

The crisis will have serious and lasting costs and gaps for other human development indicators as well (figure 4.2 and table 4.2). According to the projections for 2015, as a result of the crisis:

- The number of infants dying would increase by 55,000. Without the crisis, 260,000 additional children under the age of five could have been prevented from dying in 2015. The cumulative total from 2009 to 2015 could reach 265,000 and 1.2 million, respectively. The consequences for infant mortality in Africa are grave, with some 30,000–50,000 additional infant deaths in 2009, virtually all of them girls.[9] The tragedy is not just these added deaths—more than 3 million infants die in Africa every year, a number that could be reduced through better policies and interventions.
- Some 350,000 more students will fail to complete primary school.
- Some 100 million more people will lose access to safe drinking water.

The impact on gender equality in education and on access to safe water is muted in these scenarios (although even small changes in these indicators can translate into large numbers of people affected) because these indicators are influenced by forces that change only slowly. For example, the

FIGURE 4.2   **The long-run effect of slower growth on selected MDGs is worrisome**
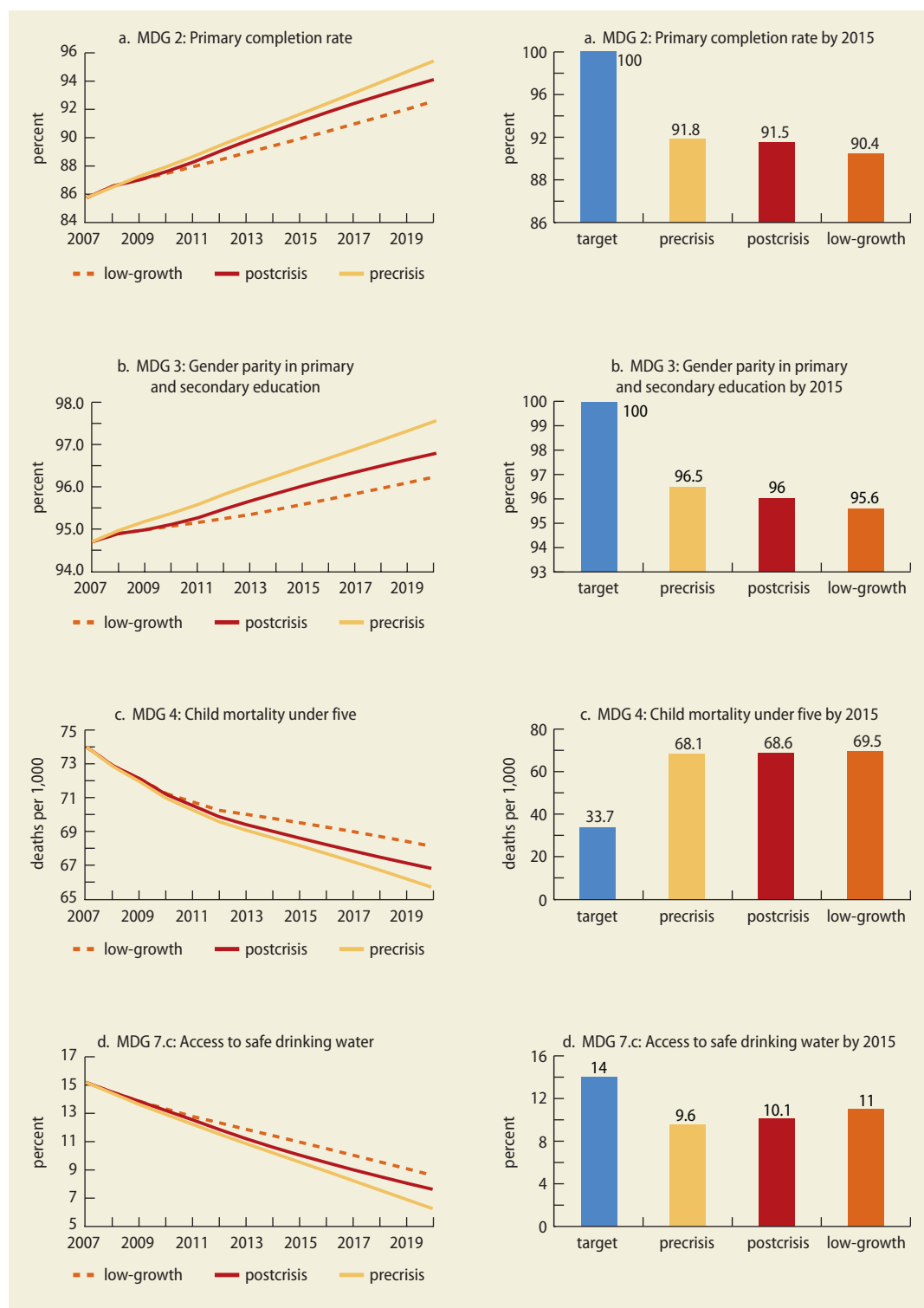
Source: World Bank staff calculations.

TABLE 4.2   **Trends for other MDG human development indicators by region and alternative economic scenarios**
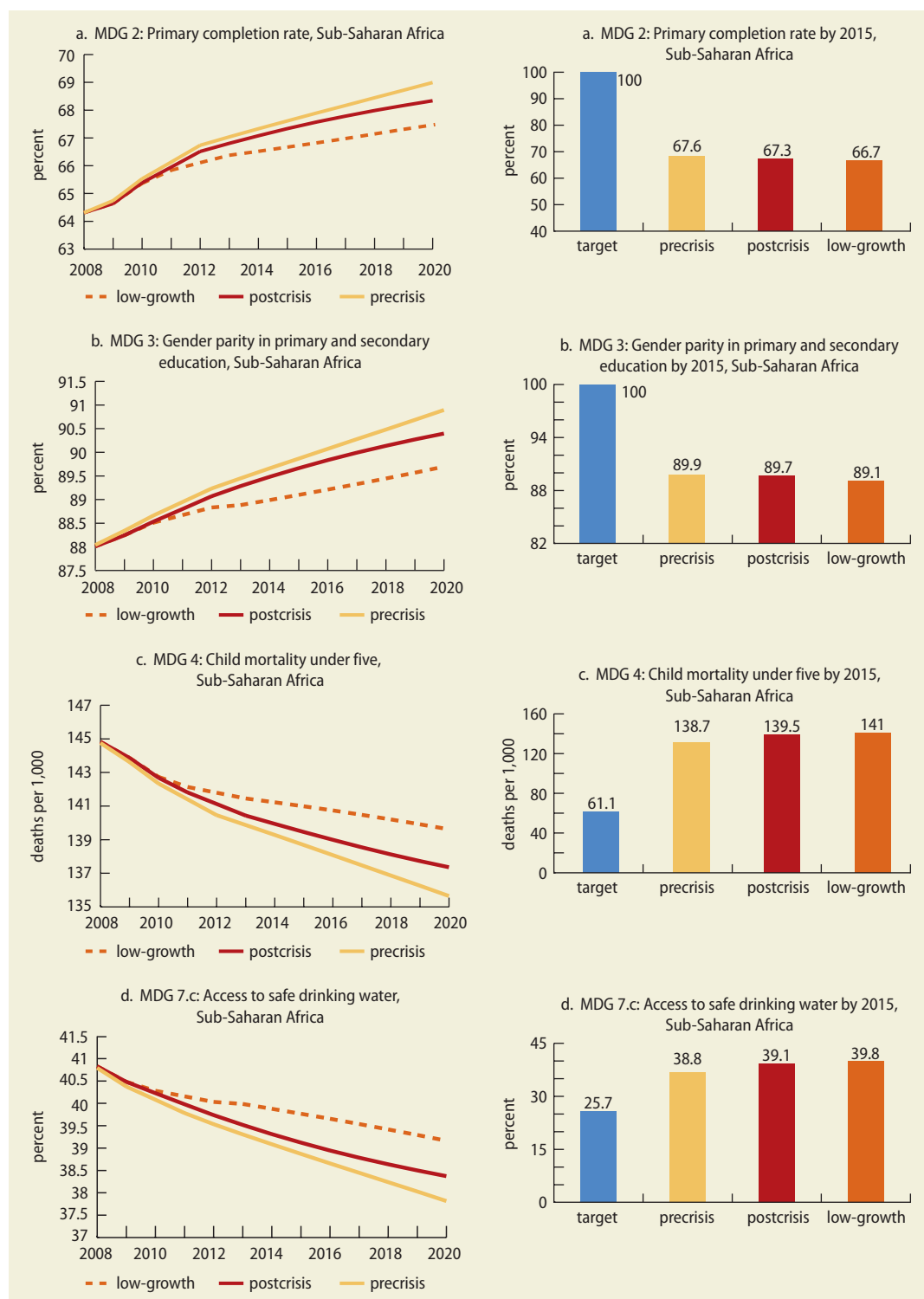
MDG and region	Target	1991	2007	2015		
				Postcrisis	Precrisis	Low-growth
MDG 2: Primary completion rate (%)						
East Asia and Pacific	100	101	98	100	100	99.3
Europe and Central Asia	100	93	98	99.9	100	99.9
Latin America and the Caribbean	100	84	100	97.9	100	97.7
Middle East and North Africa	100	78	90	94.9	95.6	93.6
South Asia	100	62	80	82.4	91.7	81.9
Sub-Saharan Africa	100	51	60	67.3	67.6	66.7
All developing countries	100	78	85	91.5	91.8	90.4
MDG 3: Ratio of girls to boys in primary and secondary education (%)	Target	1991	2007			
East Asia and Pacific	100	89	99	100	100	100
Europe and Central Asia	100	100	102	99.4	100	97.8
Latin America and the Caribbean	100	98	103	100	100	100
Middle East and North Africa	100	78	96	95.6	98.2	94.7
South Asia	100	70	89	92.7	94.4	92.1
Sub-Saharan Africa	100	79	86	89.7	89.9	89.1
All developing countries	100	83	95	96.0	96.5	95.6
MDG 4: Child mortality under five (per 1,000)	Target	1990	2007			
East Asia and Pacific	19	56	27	24.6	18.6	24.9
Europe and Central Asia	17	50	23	18.8	15.4	21.7
Latin America and the Caribbean	18	55	26	23.7	19.7	25.4
Middle East and North Africa	26	78	38	36.7	29.2	37.3
South Asia	42	125	78	76.0	62.7	76.6
Sub-Saharan Africa	61	183	146	139.5	138.7	141.0
All developing countries	34	101	74	68.6	68.1	69.5
MDG 7.c: Access to improved water source (% population w/access)	Target	1990	2006			
East Asia and Pacific	16	32	13	3.3	0.6	4.1
Europe and Central Asia	5	10	5	0	0	1.8
Latin America and the Caribbean	8	16	9	5.4	4.5	7.1
Middle East and North Africa	6	11	12	8.3	7.4	10.0
South Asia	13	27	13	9.3	5.1	10.2
Sub-Saharan Africa	26	51	42	39.1	38.8	39.8
All developing countries	12	24	14	10.1	9.6	11

Source: World Bank staff estimates.

participation by girls in school reflects in part the educational level of the mother, and access to safe water is affected by the degree of urbanization. The impact of slower growth on the MDGs increases, however, as the time horizon is extended further into the future (for example, fewer girls being educated now means that eventually women of childbearing age will have less education).

In general, the impact of the low-growth scenario on development outcomes will be cumulative and long term (figure 4.3).

- If the baseline scenario (the postcrisis trend) holds up, human development indicators will continue to improve albeit less rapidly owing to the extended impact of the crisis. By 2015 the differences between the gains

FIGURE 4.3   The long-run effect of slower growth is especially worrisome in Sub-Saharan Africa

a. MDG 2: Primary completion rate, Sub-Saharan Africa

a. MDG 2: Primary completion rate by 2015, Sub-Saharan Africa

b. MDG 3: Gender parity in primary and secondary education, Sub-Saharan Africa

b. MDG 3: Gender parity in primary and secondary education by 2015, Sub-Saharan Africa

c. MDG 4: Child mortality under five, Sub-Saharan Africa

c. MDG 4: Child mortality under five by 2015, Sub-Saharan Africa

d. MDG 7.c: Access to safe drinking water, Sub-Saharan Africa

d. MDG 7.c: Access to safe drinking water by 2015, Sub-Saharan Africa

Source: World Bank staff estimates.
Note: The precrisis period is 2000–07.

projected in the postcrisis trend and those for the precrisis trend will become discernible, especially for human development outcomes such as primary school completion and infant mortality.

- Like the compounding effects of interest rates, these gaps will intensify from 2015 to 2020. A look at the long-term impact reveals that the projected slide in human development outcomes will become damaging and irreversible unless action is taken now.

- The world needs to avoid economic stagnation. If the growth trend in developing countries becomes sluggish for a long time, as in the low-growth scenario, development outcomes will deteriorate or stall, as happened in many low-income countries in Sub-Saharan Africa during the 1970s and 1980s.

Spending strategies under less favorable circumstances

What can developing countries do if the external economic environment remains unfavorable, and what impacts might their policy and spending strategies have on development outcomes? The three global growth scenarios provided a broad picture of the likely impact of the crisis on poverty. But these scenarios cannot be used to explore the scope for mitigating the effects of external shocks on poverty through appropriate policy adjustments. For this purpose, the broad country coverage achieved in the scenarios given above is set aside in favor of a richer analysis of the impact of policies.

To begin, low-income countries are divided into two groups—those that are resource rich and those that are resource poor.[10] A representative economy of each type is then constructed based on the average indicators for all of the low-income countries in that group (tables 4A.1 and 4A.2 in the annex summarize the social and economic indicators that characterize each country archetype; for the most part they correspond to the latest median statistics from the World Bank's World Development Indicators database. The assumptions and data used in constructing

each of the two representative economies are given in box 4.3.

These simulations use the World Bank's Maquette for MDG Simulations (MAMS), a model that analyzes the implications of strategic choices for economic outcomes, including changes in human development indicators (see box 4A.1 in the annex for more discussion).[11] MAMS' main contribution is its integration of government services and their impact on the economy, including on the MDGs and the labor market, within a standard recursive dynamic computable general equilibrium framework. Several MAMS features are useful for assessing the impact of alternative scenarios on MDGs. The model incorporates a formal representation of the production of government services (education, health, and infrastructure) that takes into account demand, supply, and efficiency. It allows for complementarity or synergy effects across the MDGs—for example, better access to clean water may improve health, which may boost school attendance, labor productivity, and economic growth. It shows the economywide repercussions of scaling up (or down) human development services, including the impact on economic growth, relative prices, the exchange rate, and the allocation of resources between government and nongovernment sectors. And it makes possible the consideration of sequencing and time-related trade-offs through a recursive treatment of dynamics that tracks indicators over time.

The low-income, resource-poor country

The analysis for the low-income, resource-poor archetype (LIRP) considers four cases (the reference year for the analysis is 2009, and the simulation period is 2010–20):

- The *base case* is relatively optimistic. It assumes that GDP growth recovers by 2011 to the growth rate in 2008. The annual growth rate in 2012–20 is slightly higher than in 2011 (see figure 4.4 for GDP growth under different LIRP cases). Growth in foreign aid is slower after 2010

BOX 4.3   Assumptions for the archetype countries

The low-income, resource-rich (LIRR) archetype has a natural resource that it exports. The government receives 70 percent of the income, and foreign investors get the rest. In 2009 government income from the natural resource was 8.4 percent of GDP. All output of the natural resource commodity is exported and accounts for 56 percent of the value of total exports. Government borrowing is 2.6 percent of GDP, and foreign debt is 49 percent of GDP. The country receives no debt relief during the simulation period.

The low-income, resource-poor (LIRP) archetype is more dependent than the LIRR on foreign aid, which equals about 6.5 percent of GDP, and its foreign debt is higher, at 65 percent of GDP. Like the LIRR, it receives no debt relief during the analysis period.

The poverty headcount rate at $1.25 a day (the indicator for MDG 1) is 49.6 percent for the LIRP

archetype and 61.8 percent for the LIRR—the median values for the countries in each group. The poorest statistics for the LIRR result partly from the "natural resource curse" associated with past conflicts and corruption; see, for example, Collier and Goderis (2007). Median GDP per capita is $598 for the LIRP and $482 for the LIRR. Similarly, both the LIRP and the LIRR are assumed to have the median value of their group for share of the population with access to clean water (MDG 7); the under-five mortality rate (MDG 4); and selected education indicators, including the gross completion rate for primary school (MDG 2) and gross enrollment rates at all three levels (primary, secondary, and tertiary). The analysis looks especially at the evolution of MDGs 1, 2, 4, and 7.

Government and nongovernment payments and foreign debt of archetype countries, 2009
percent of GDP

Payment	Low-income, resource-poor countries	Low-income, resource-rich countries
Income from natural resource	n.a.	8.4
Foreign aid	6.5	1.2
Taxes	20.2	16.0
Private borrowing	0.5	0.4
Foreign borrowing	4.0	2.6
Foreign debt	65.0	48.8
Foreign direct investment	1.9	1.7
Remittances	1.3	1.2

Source: Go and others, forthcoming.
Note: n.a. = not applicable.

than in the previous decade, reflecting a decline in GDP growth in donor countries.[12] Remittance growth and foreign direct investment (FDI) fall relative to the previous decade, also reflecting a decline in GDP growth in the countries from which the payments flow. By 2015 world prices have recovered to 2008 precrisis levels.

• The *low-aid case* represents an extreme, negative case with a weak recovery in GDP growth (to just 40 percent of real GDP growth in the base case), driven by a deteriorating external environment and a decline

in productivity growth. World prices, FDI, and foreign aid all grow at slower rates than in the base case (25 percent of base case rates). The growth slowdown for foreign aid and other government receipts leads to reduced development spending (defined as spending on education, health, water and sanitation, and infrastructure), as the government fails to reduce spending in other areas. Remittances are assumed to grow at the same annual rate as in the base case because these payments are based on personal connections, and there is little

reason to expect them to respond negatively to slower growth in the developing countries.

- In the *low-aid internal 1 case* the government makes internal adjustments to offset the effects on the MDGs of a weak recovery in GDP and reduced growth in foreign inflows. The government reduces growth in nondevelopment spending (to 90 percent of such spending in the base case), increases receipts from domestic taxes (by half a percentage point of GDP over the base case), and uses the resulting fiscal space to expand development spending.
- In the *low-aid internal 2 case,* the government further improves policies and service delivery relative to the low-aid internal 1 case, resulting in a moderately higher GDP growth (55 percent of the base-case rate).[13]

Slow growth in the low-income, resource-poor country results in a severe deterioration in human development indicators. All four of the MDGs covered by the analysis (poverty, primary school gross completion rate, under-five mortality rate, and share of population with access to safe water) decline in the low-aid simulation relative to the base case (figure 4.5). By 2020 the poverty rate is more than 20 percentage points higher, the under-five mortality rate 15 points higher, and the share of the population with access to safe water 4 percentage points lower in the low-aid case than in the base case. The gross primary school completion rate improves in all scenarios, as students enrolled in lower grades (reflecting recent strong expansion in primary enrollment) proceed through the primary level. Because of a natural decline in the intake of out-of-cohort students, progress tends to level off.[14]

With better expenditure management and internal effort in the low-aid internal 1 case, including a government shift in expenditures to protect development spending and increased domestic tax collection, all the MDGs (except poverty reduction) do better than under the low-aid case. The poverty rate in the low-aid internal 1 case is marginally higher than in the low-aid case, because

FIGURE 4.4   **Annual GDP growth for LIRP under four cases**
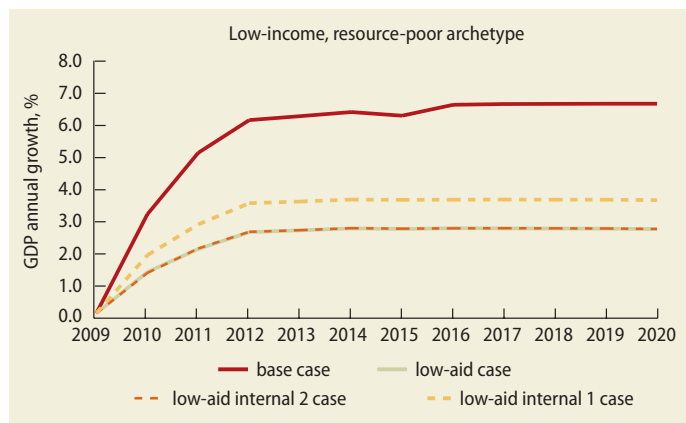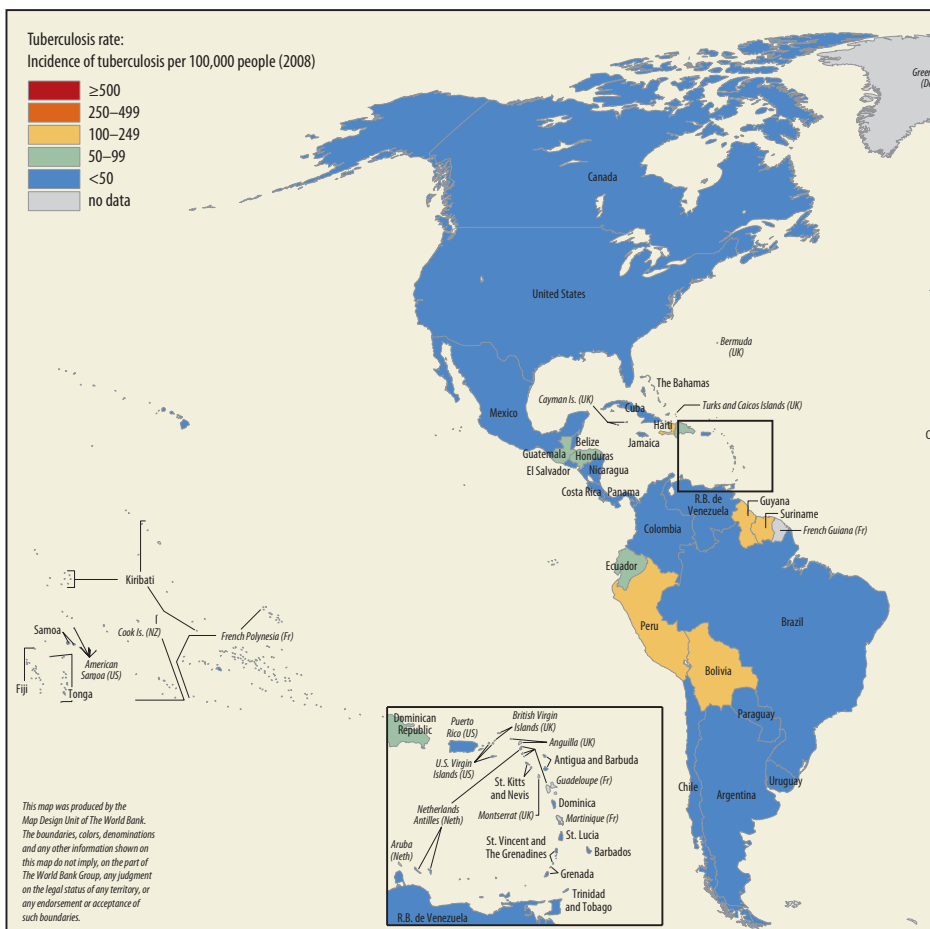

Source: Go and others, forthcoming.

the increase in taxes (predominantly indirect taxes in low-income countries) reduces expenditures or incomes of the poor.

Under the low-aid internal 2 case, a more substantial improvement in MDG indicators can be accomplished by combining improved fiscal policies with policies that improve overall productivity. Progress toward the MDGs improves relative to the low-aid internal 1 and the low-aid cases, although not enough to catch up with the base case.

Thus policy adjustments to support development spending and improve overall economic productivity are critical to limiting the impact on human development indicators of an externally induced decline in GDP growth (for example, the current crisis). However, to the extent that policies cannot maintain trend growth in the face of an external shock, then a deterioration in human development indicators is inevitable. This fact highlights the importance of a global response to the crisis that focuses on ensuring strong flows of aid, limiting the deterioration in developing countries' access to external finance, and maintaining open export markets to permit trade expansion at more attractive world prices.

## The low-income, resource-rich country

The pattern of results for the low-income, resource-rich archetype (LIRR) is similar to

MAP 4.2   Tuberculosis kills around 1.3 million people a year, or 3,500 a day

Tuberculosis rate:
Incidence of tuberculosis per 100,000 people (2008)

- ≥500
- 250–499
- 100–249
- 50–99
- <50
- no data

This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

Source: World Development Indicators.

that of the LIRP, including GDP growth rates in figure 4.4. Under the optimistic base case, which, unlike the other scenarios, includes a strong recovery in the world price of the natural resource export, all MDG indicators continue to improve. Internal adjustment (that is, the government reduces growth in nondevelopment spending, increases domestic taxes, and uses the resulting fiscal space to expand spending on education, health, water and sanitation, and infrastructure) in the context of stagnant export prices for the natural resource improves progress toward

the MDGs but is not sufficient to bring the country up to the path of the base case (figure 4.6). A resource-rich country has the ability to draw down reserves accumulated from its resource exports or to increase government foreign borrowing, in both cases creating a capital inflow, captured by the government. This option, incorporated into the low-aid internal 2 simulation, can move progress on the MDGs closer to the base path. [15] But at the level reported, the LIRR country cannot make up for the impact of the financial crisis on MDGs through internal adjustment alone.
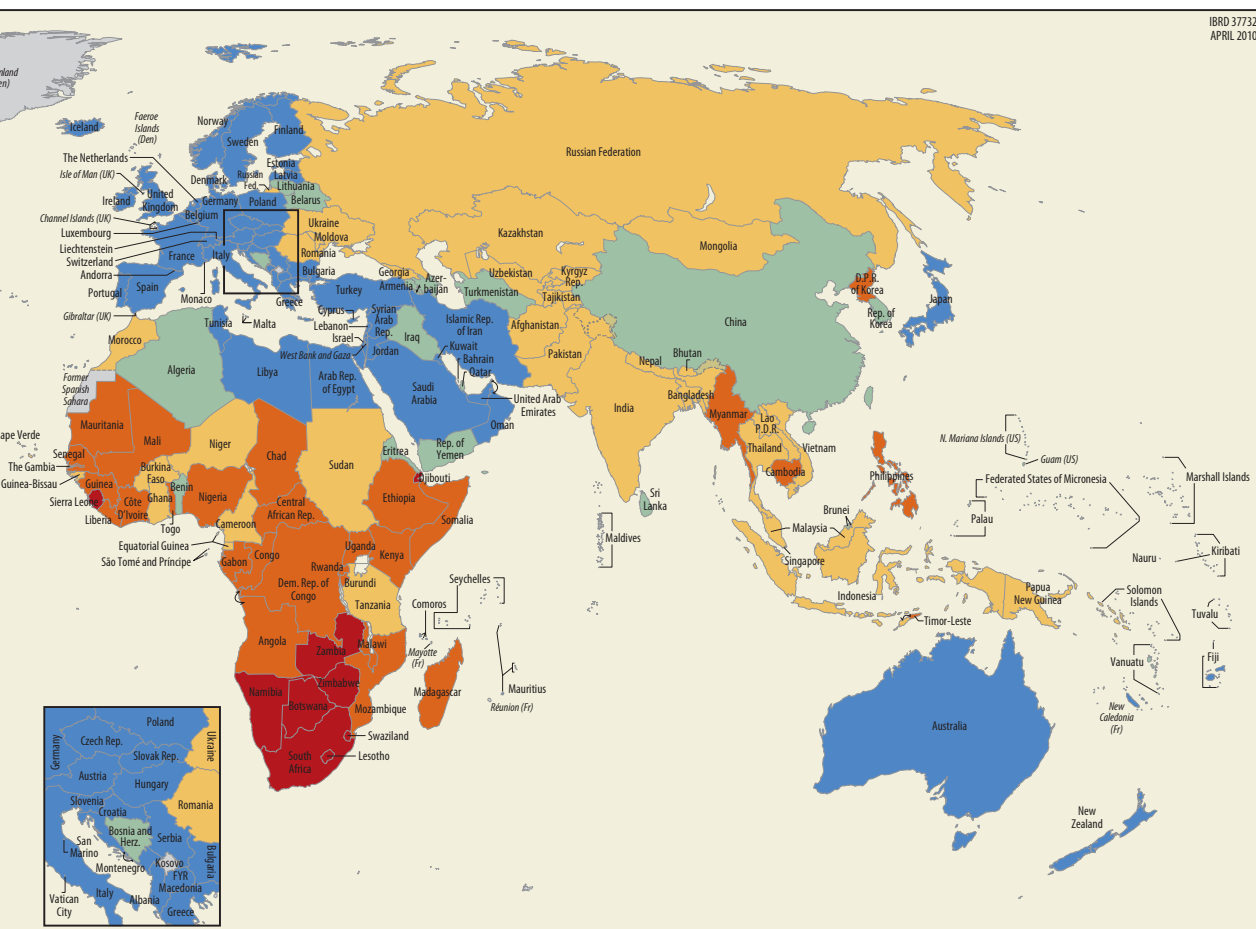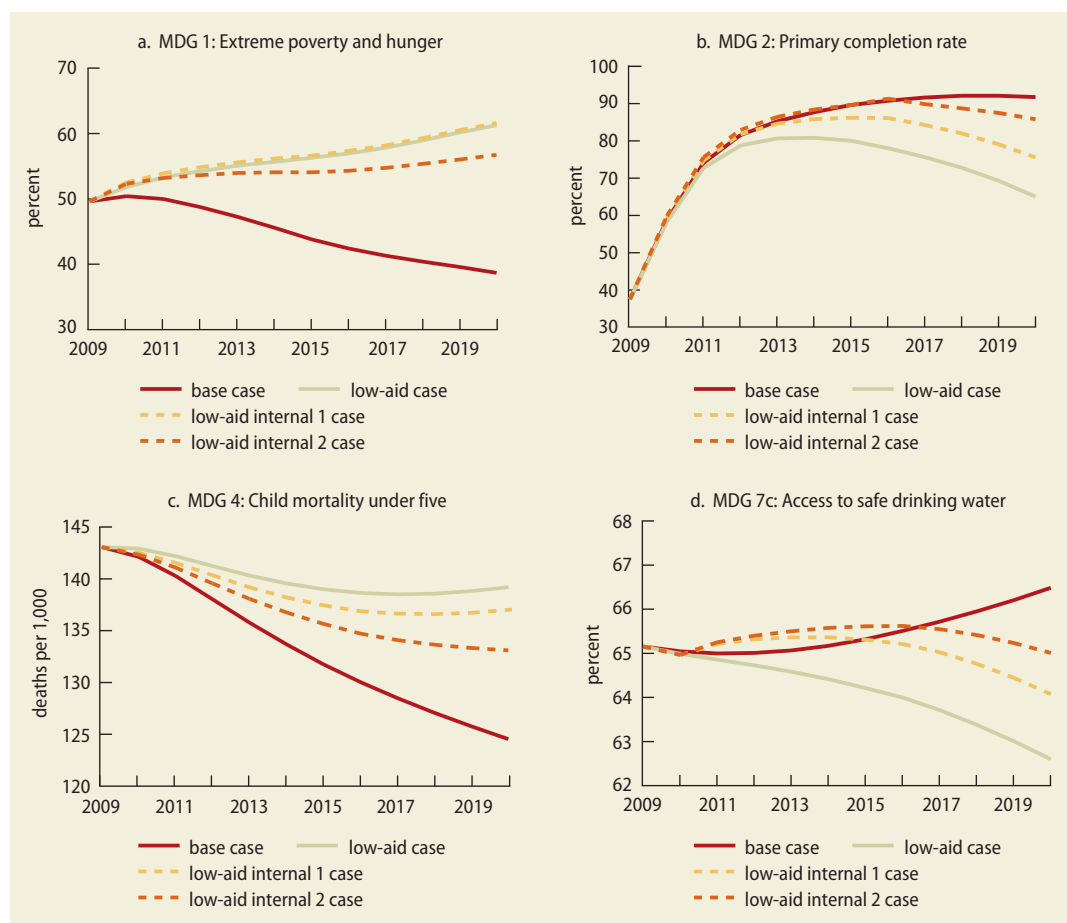
Summary and conclusions

This chapter presented forecasts of MDG outcomes at the global level and for Sub-Saharan Africa based solely on alternative assumptions for growth in developing countries. It also explored the scope for policy improvements to mitigate the impact of slower growth on progress toward the MDGs through simulations using two archetypical low-income countries, one representing those that are resource rich and the other those that are resource poor. While understanding the prospects for progress toward the MDGs is of crucial importance as the world looks forward to 2015 and beyond, it should be recognized that such analysis inevitably is fraught with difficulties given data gaps and still-limited knowledge about the processes that determine these outcomes.

The projections given here indicate that the economic crisis will lead to a deterioration across all MDGs, extending beyond 2015. In all the growth scenarios, the world

FIGURE 4.5   **Simulated MDG outcomes for the LIRP archetype under alternative cases**

a. MDG 1: Extreme poverty and hunger

b. MDG 2: Primary completion rate

c. MDG 4: Child mortality under five

d. MDG 7c: Access to safe drinking water

base case — low-aid case — low-aid internal 1 case — low-aid internal 2 case

Source: World Bank staff calculations using the Maquette for MDG Simulations (MAMS). See Go and others, forthcoming.

will meet the MDG of halving its headcount poverty rate using a poverty line of $1.25 a day. However, the poverty rate in 2015 is considerably higher in the low-growth scenario (18.5 percent) than in the postcrisis trend (15 percent), which assumes a rapid recovery from the crisis. The rough magnitude of the projected effects on hunger is similar. Underlying these figures are considerable regional variations. Sub-Saharan Africa poses the greatest challenge—it has the highest poverty

rates and will have the most difficulty achieving its regional poverty reduction targets.

The projected impact of alternative scenarios for growth on the other MDGs analyzed here—completion of primary school, under-five mortality rate, gender equality in education, and access to safe water—is more limited, although small changes in these percentages may involve large numbers of people. This muted effect reflects the presence of significant lags, perhaps most obviously

FIGURE 4.6   Simulated MDG outcomes for the LIRR archetype under alternative cases
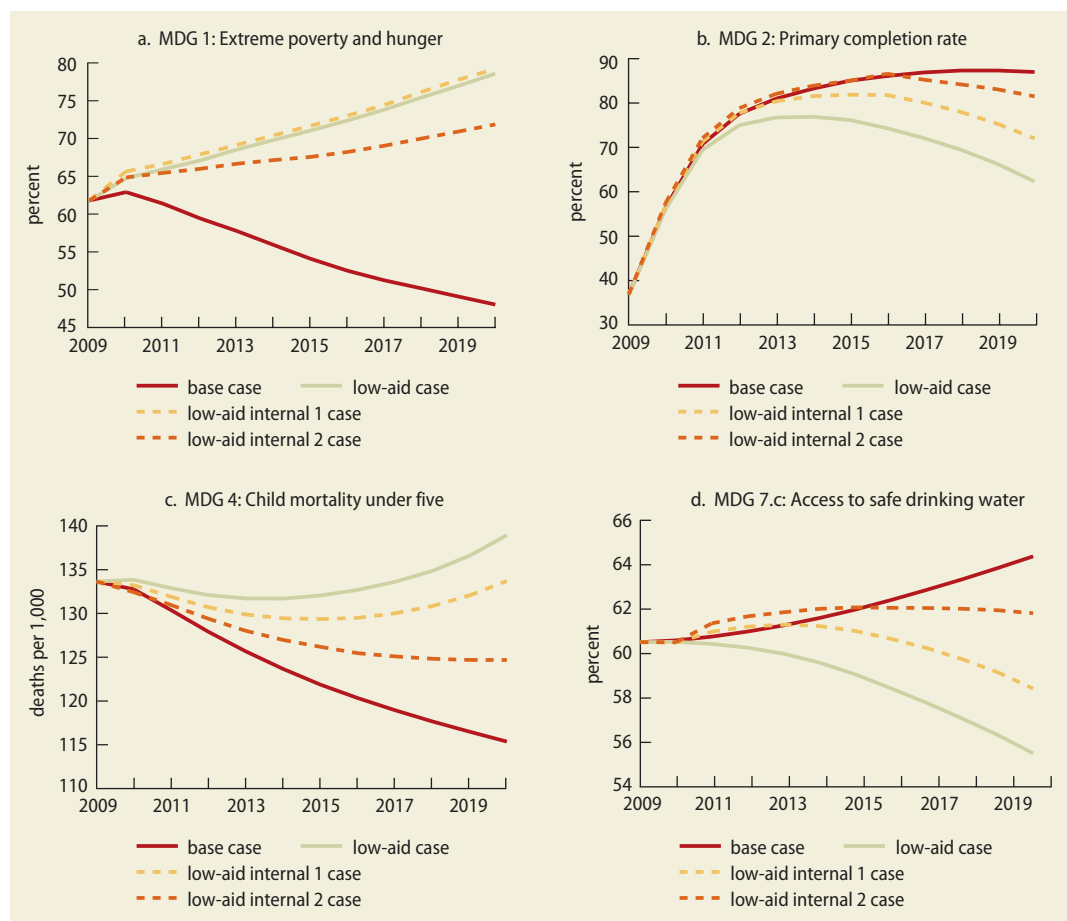
Source: World Bank staff calculations using the Maquette for MDG Simulations (MAMS). See Go and others, forthcoming.

in education. The negative effects of slower growth will make themselves more strongly felt in the long run, however.

Country-level simulations for the two low-income archetypes indicate that, if the global economic environment and domestic GDP growth recover rapidly, continued progress will take place across the MDGs that are covered here (poverty, primary completion, under-five mortality, and access to safe water). If the global recovery is weak, internal efforts (including spending switches toward

development and tax increases) lead to some improvement in the MDGs compared with a scenario with no improvement in policies. However, the improvement from internal efforts alone falls far short of that required to achieve the base-case levels of the MDG indicators. Thus, while policy matters, better development outcomes hinge critically on a rapid global recovery that improves export conditions, terms of trade, and capital flows for low-income countries. Chapter 5 turns to this subject.