

Growth, Poverty Reduction, and Environmental Sustainability

Under the first Millennium Development Goal (MDG1), the international community aims to halve the global rate of extreme income poverty—as measured by the share of the population living on less than \$1 per day—between 1990 and 2015. Current trends and growth forecasts indicate that this goal will be achieved, although not in Sub-Saharan Africa. High growth in China and India explains much of the reduction in the global poverty rate, although progress toward MDG1 has also quickened in many other developing countries. High growth has continued in most of the developing world in the past year as a result of better policies in developing countries and a favorable global environment. The outlook for growth and poverty reduction remains favorable, although some risks remain. In particular, low-income country per capita growth is expected to remain above 5 percent in 2007.¹

Addressing the problems of fragile states (box 1.1) is central to the development agenda and to furthering progress toward the MDGs.² Nine percent of the population, and about 27 percent of the extreme poor in developing countries live in fragile states. This situation will not improve unless fragile states become less vulnerable to adverse shocks, and they increase their capacity to

absorb external funds and to mobilize internal resources for sustained poverty reduction and improved economic security. This chapter focuses on the growth and macroeconomic policies of fragile states, while later chapters deal with other aspects.

The chapter also reports on recent progress in further areas covered in last year's *Global Monitoring Report* (GMR) that are central to achieving higher sustained growth, promotion of a better investment climate, and improvements in governance. A better investment climate is key to attaining higher growth and employment creation, while, as noted in last year's GMR, governance is an ongoing part of MDG monitoring, because it is an important factor underpinning a country's development effectiveness and progress toward the MDGs.

While higher economic growth is generally desirable, one should also be aware of its environmental costs. Although the recent boom in commodity prices has helped to underpin strong growth in many of the most natural resource-dependent economies, high resource dependence can lead to high rates of resource depletion. Countries are liquidating assets when they extract minerals and energy, harvest forests and fish unsustainably, or deplete their agricultural soils, and this can have consequences for future growth.

BOX 1.1 Definition of fragile states

Fragile states is the term generally used to refer to countries that are facing particularly severe development challenges such as weak governance, limited administrative capacity, violence, or the legacy of conflict. In defining policies and approaches toward fragile states, different organizations have used different criteria and terms. Despite methodological variations, however, development partners have been converging around an approach developed at the OECD, which recognizes common characteristics of weak governance and vulnerability to conflict, together with differentiated constraints and opportunities in fragile situations of (1) prolonged crisis or impasse, (2) postconflict or political transition, (3) gradual improvement, and (4) deteriorating governance.^a

While important for the development of shared strategic and operational approaches, the OECD-DAC typology does not generate a country time series that can be used for research purposes. This year's GMR uses the World Bank definition of fragile states, which is based on a measure of the countries' Country Policy and Institutional Assessment (CPIA) and governance scores.^b The CPIA-based definition also has the advantages of (1) being a multidimensional concept; (2) being development-oriented, (3) stemming from a robust, review-based process; (4) giving weight to governance, a crucial variable that reflects the capacity of states; and (5) strongly correlating with conflict-related variables.

a. "Fragile States: Policy Commitment and Principles for Good International Engagement in Fragile States and Situations," DAC Senior Level Meeting, December 5–6, 2006.

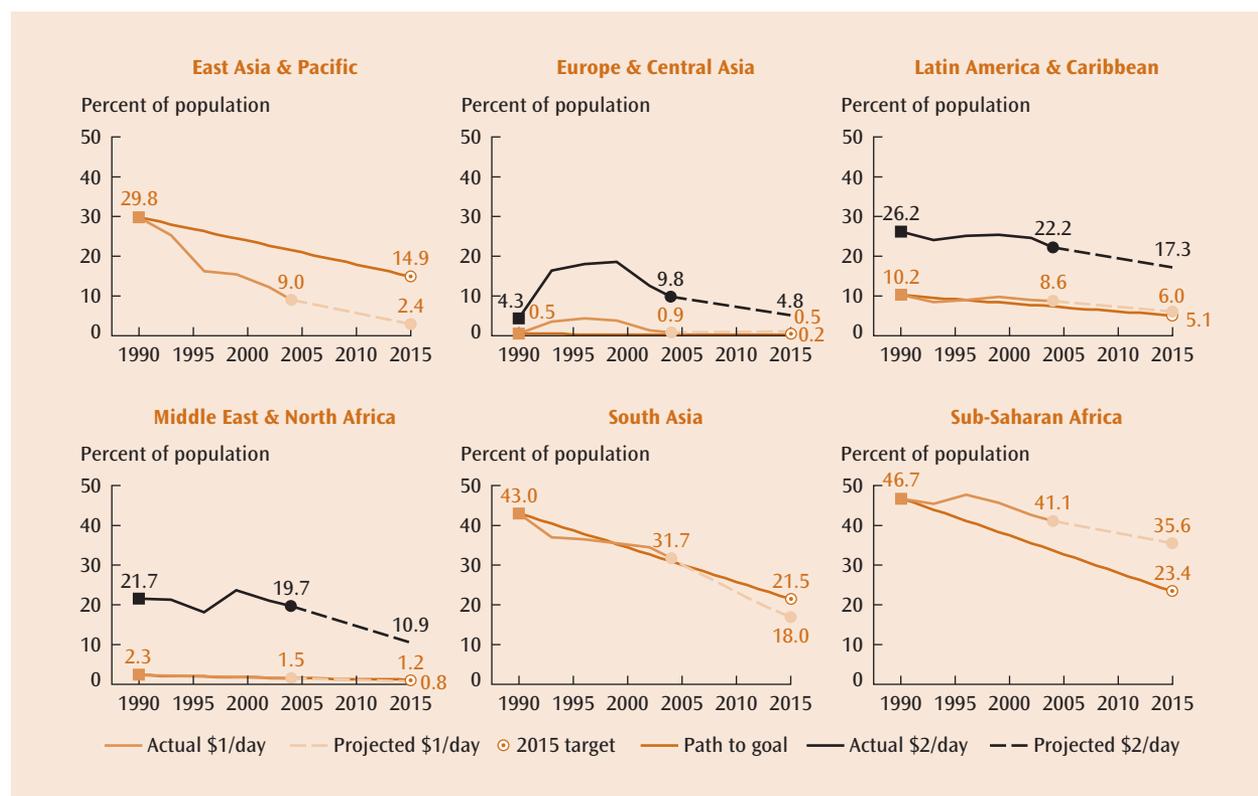
b. The World Bank definition covers countries scoring 3.2 and below on the CPIA. This is similar to the bottom two quintiles of the CPIA, which the OECD-DAC has used for research purposes on fragile states, but has the advantage of being an absolute rather than a relative threshold, allowing the total number of countries covered to vary from year to year depending on changes in performance. This classification—previously referred to as "Low Income Countries Under Stress" (LICUS)—has been in use in the Bank since 2003; CPIA scores over the years 1998 to 2005 are used to determine what states were fragile over this time period. For years before 1998, cutoff values were determined by comparing the distribution of the CPIA in each year with that for 1998–2001. Since it is determined for each year, fragility is a status, not a permanent classification. Countries may thus be intermittently fragile, although the data used throughout this report are smoothed to avoid excessive volatility in the classification of borderline cases.

Gender equality—in the sense of equality of opportunities, not outcomes—plays an important role in development. Cross-country data show an inverse relationship between the incidence of poverty and the level of gender equality as measured by the rate of female labor market participation. Greater gender equality in access to education, land, technology, and credit markets is also associated with lower poverty. While the direction of causality of these relationships is unclear, it is evident that higher gender equality is associated with better MDG outcomes, including higher nutritional status and lower poverty. These themes are explored in chapter 3.

Poverty Reduction and Growth

Progress on Poverty Reduction

The prospects for achieving MDG1—halving poverty by 2015—are largely unchanged from last year's *Global Monitoring Report*. Overall, the world as a whole is on track to meet the goal with the population share of the extreme poor in developing countries projected to fall from 29 percent in 1990 to 12 percent in 2015. By 2004, over halfway through the goal period, this share had already dropped to 18 percent. Preliminary estimates suggest that the number of extremely poor people in developing countries fell by 135 million between 1999 and 2004.

FIGURE 1.1 Progress toward the poverty MDG target 1990–2004, and a forecast for 2015

Source: World Bank staff.

Note: The graphs show preliminary data with growth forecasts under review.

This positive assessment overshadows significant regional differences (see figure 1.1). Sub-Saharan Africa remains a long way off the path that would take it to MDG1, even assuming projected growth rates higher than the historic averages since 1990. Between 1999 and 2004, the share of people in extreme poverty in the region fell to 41 percent, a decline of 4.7 percentage points, but higher population growth left the same absolute number of poor at nearly 300 million. The region now accounts for 30 percent of the world's extreme poor, compared with 19 percent in 1990 and only 11 percent in 1981. The Europe and Central Asia region has lost ground since 1990, and may not meet the development goal. The Middle East and North Africa region is expected to achieve MDG1, albeit narrowly, while the Latin America

and Caribbean region is likely to come close. However, the main drivers of poverty reduction globally continue to be countries in the East Asia and Pacific and South Asia regions, which—thanks to spectacular rates of growth in the last decade—are both set to overshoot the poverty target. By 2015, extreme poverty rates are projected to be below 3 percent for EAP countries, and 18 percent for SA countries, as compared to MDG1 targets of 15 and 22 percent respectively.

For a number of countries,³ it is possible to go beyond the regional estimates presented in figure 1.1, and use poverty estimates from household surveys to examine whether, for a typical country, the upturn in growth since the late 1990s led to poverty reduction (table 1.1). The countries included

TABLE 1.1 Impact of growth of GDP per capita on poverty^a
Averages (percent)

Region or Income Grouping	Number of Countries	Annual Percent Growth in GDP per capita	Initial Poverty Rate (\$1/day)	Annual Percent Change in Poverty Rate (\$1/day)	Elasticity ^b	Initial Poverty Level (\$2/day)	Annual Percent Change in Poverty Rate (\$2/day)	Elasticity ^b	Initial Gini Index	Annual Diff. in Gini
Low-income countries	19	3.7	23.5	-4.85	-1.32	54.0	-3.12	-0.85	40.5	-0.12
Sub-Saharan Africa	5	1.7	48.8	-2.50	-1.46	78.5	-1.05	-0.61	47.1	-0.14
East Asia and Pacific	4	3.2	16.9	-9.36	-2.91	60.8	-4.04	-1.26	34.5	-0.02
Europe and Central Asia	7	6.0	8.6	-26.05	-4.31	33.7	-9.81	-1.62	36.3	-0.41
Middle-income countries	26	2.1	5.7	-1.51	-0.72	19.7	-1.06	-0.51	44.7	0.20
Europe and Central Asia	8	5.2	0.8	-2.32	-0.45	9.9	-1.27	-0.25	33.7	0.45
Latin American and the Caribbean ^c	14	-0.1	7.7	0.02	-0.21	21.5	0.20	-2.78	50.5	0.07
Memorandum items										
India (1994–2005)		4.55	42.1	-1.47	-0.32	85.5	-0.48	-0.11	32.8	0.36
China (1999–2004)		8.11	17.8	-11.73	-1.45	81.1	-7.23	-0.89	41.6	0.44

Source: World Bank and IMF staff.

a. Two surveys for each country were undertaken at intervals of three to eleven years. The last survey for each country was undertaken between 2002 and 2005. Estimates of GDP per capita growth and changes in poverty rates are annualized proportional changes in cross-country averages. All averages are unweighted.

b. Percentage change in poverty rate divided by percentage growth in GDP per capita.

c. Includes data for Argentina and Uruguay based on urban household surveys.

are those with household surveys conducted during both the middle/late 1990s and after 2001. The results must be interpreted with caution in view of possible survey measurement and sampling errors, and, in view of the limited number of countries for which there are appropriate data, may not be representative of entire regions or country groups. Furthermore, the relationship between growth and poverty may be obscured by changes in relative prices, taxes and transfers, including worker remittances, and, as noted below, changes in income distribution.

In low-income countries the preliminary estimates suggest that, on average, growth has clearly resulted in lower poverty incidence: for a sample of 19 low-income countries, 1 percent of GDP growth was associated with a 1.3 percent fall in the rate of extreme poverty and a 0.9 percent fall in the \$2-a-day poverty rate. Clear poverty impacts are also evident in the three regions for which sufficient country-level data are available. The picture is somewhat differ-

ent for middle-income countries where the impact of GDP per capita growth on poverty was less. While a high negative elasticity was obtained for the Latin America and the Caribbean sample by the \$2-a-day poverty definition, this reflects increased poverty in a context of near-zero negative growth. One hypothesis is that the poor in the middle-income countries examined were drawn relatively heavily from economically productive groups, who did not enjoy the benefits of growth given its sectoral and geographic composition, and from groups such as retirees and the unemployed, who may depend substantially on public transfers.

There was also a somewhat different impact of growth on poverty incidence in China and India. In China, high growth led to very substantial decreases in poverty rates, while in India, the gains in poverty reduction were more modest. In both countries, poverty reduction took place despite a worsening of the income distribution. Between 1981 and 2004, there was an estimated decline in the

absolute number of extreme poor in China of over 500 million people, while in India, the number of extreme poor remained roughly constant (see annex table 1A.3).

Changes in income distribution have not, on average, reduced the impact of income growth on poverty reduction in low-income countries. Inequality in income as measured by the Gini index declined on average for the overall sample of low-income countries. In contrast, income inequality widened on average in middle-income countries, thus hindering poverty reduction.

Improvements in Long-Term Growth

It is reassuring that the pick-up in low-income-country per capita growth rates that started in the 1990s continued in 2006 with an estimated overall per capita GDP growth of 5.9 percent, up from an average of 4.0 percent in 2001–05 (table 1.2). As in previous years, most regions show strong growth performance, with a particularly impressive rate of growth in the low-income countries of Europe and Central Asia, which are still experiencing a rebound after the transition recession of the mid-1990s. The region continues to benefit from strong com-

TABLE 1.2 Per capita GDP growth for high-, middle- and low-income countries

	1986–90	1991–95	1996–2000	2001–05	2004	2005e	2006f	2007f
<i>Real per-capita GDP growth^a</i>								
World	1.8	0.8	2.0	1.5	2.9	2.3	2.9	2.2
Memo item: World (PPP weights) ^b	..	..	3.9	4.0	5.2	4.7	5.3	4.5
High income	2.9	1.4	2.4	1.4	2.6	2.0	2.6	1.9
Low-income countries	2.9	1.8	2.2	4.0	5.0	5.6	5.9	5.4
East Asia and Pacific	4.7	5.4	0.4	3.8	4.1	4.9	4.7	5.1
Europe and Central Asia	6.6	-11.3	3.8	6.8	7.1	10.2	11.5	9.3
Latin America and Caribbean	-1.1	-0.3	1.4	0.7	1.8	1.7	1.8	1.8
Middle East and N. Africa	6.8	0.9	2.1	0.4	-0.7	0.6	0.8	-0.6
South Asia	3.6	3.0	3.5	4.7	6.1	6.5	6.8	5.9
<i>Excluding India</i>	2.0	2.3	1.9	2.9	4.2	4.8	4.4	4.5
<i>India</i>	4.1	3.2	4.0	5.2	6.7	7.0	7.5	6.4
Sub-Saharan Africa	0.1	-1.6	1.0	2.4	3.1	4.0	4.0	4.4
Middle-income countries	1.0	1.8	3.3	4.3	6.4	5.6	6.2	5.4
East Asia and Pacific	6.1	9.6	6.2	7.9	8.7	8.5	9.1	8.1
<i>Excluding China</i>	5.4	4.9	1.0	3.2	5.0	3.3	4.0	3.7
<i>China</i>	6.3	11.1	7.7	8.8	9.4	9.5	10.0	8.9
Europe and Central Asia	0.6	-4.5	2.9	5.2	7.3	6.0	6.4	5.6
Latin America and Caribbean	-0.2	1.8	1.6	0.9	4.5	3.1	4.0	2.9
Middle East and N. Africa	-0.6	1.7	2.3	3.0	3.2	2.7	3.3	3.2
South Asia	..	..	..	..	..	..	..	..
Sub-Saharan Africa	-0.2	-1.3	1.4	3.0	3.8	4.4	4.2	3.3
Fragile States	3.4	-2.6	0.9	2.5	3.4	4.7	4.6	4.7
Memorandum items								
Developing countries	1.1	1.5	2.8	3.9	5.8	5.3	5.9	5.2
excluding transition countries	1.6	3.4	2.9	3.8	5.8	5.3	5.9	5.1
excluding China and India	0.2	-0.4	1.5	2.2	4.5	3.6	4.2	3.5

Source: World Bank.

Note: PP = purchasing parity; e = estimate; f = forecast.

a. GDP in 2000 constant dollars; 2000 prices and market and exchange rates.

b. GDP measured at 2000 PPP weights.

modity prices and export earnings. In South Asia, growth in India continues at a formidable pace, but other countries in the region are also doing well with the exception of Nepal, which has been suffering from political unrest. Most importantly, in view of the high poverty in the region, Sub-Saharan African countries are also experiencing sustained and rising growth rates. Oil-exporting countries have contributed significantly to this strong performance. Increased oil production and the large terms-of-trade gains from the oil price hike have boosted domestic incomes and spending. Non-fuel-exporting African countries seem to have weathered the adverse shock of high oil prices well, thanks to a mixture of improved policies and strong non-fuel commodity prices. In contrast with the high rates of per capita growth in other regions, growth among low-income countries in the Middle East and North Africa and Latin America and the Caribbean regions continues to be much lower.

Growth in middle-income countries also continues to be strong. China remains the star

performer with an estimated per capita growth of 10 percent in 2006. But other middle-income countries in the region and elsewhere are also growing at sustained rates, thus improving prospects for the gradual reduction of the pockets of poverty that still exist in these countries. Recent outcomes suggest that per capita growth rates in middle-income countries have increased, with average rates in the last few years significantly and consistently higher than pre-2000 values.

Weak Growth and Less Poverty Reduction in Fragile States

Fragile states have consistently grown more slowly than other low-income countries (table 1.3). Although the average per capita growth of such states has picked up in recent years, this is partly due to accelerated expansion in a few fuel-producing countries and a fall in the number of conflicts. Among non-fuel-producing fragile states, while growth has increased since 2000, the outlook is for per capita growth to remain a full percentage

TABLE 1.3 Real per capita growth and investment and savings rates of fragile and nonfragile states (percent)

Real per capita growth, investment and savings rates	1986–90	1991–95	1996–2000	2001–05	2004	2005	2006e
<i>Per capita GDP growth</i>							
Fragile states	0.1	–2.5	0.3	2.1	3.2	3.3	2.6
Fuel producers	1.7	–5.5	2.4	2.9	2.2	5.9	4.0
Non–fuel producers	–0.1	–2.0	–0.1	2.0	3.4	2.8	2.3
Nonfragile states	1.3	–0.1	2.9	3.0	3.5	4.1	4.5
<i>Gross fixed capital formation/GDP</i>							
Fragile states	16.1	17.7	17.7	18.3	18.3	19.2	20.4
Fuel producers	16.9	21.5	25.7	20.4	18.4	21.4	31.1
Non–fuel producers	16.0	17.0	16.4	18.0	18.3	18.8	18.6
Nonfragile states	21.4	24.6	22.6	24.1	25.5	25.2	25.6
<i>Gross national savings/GDP</i>							
Fragile states	11.3	11.1	9.8	12.6	15.7	15.8	18.8
Fuel producers	14.3	15.5	14.7	23.6	28.7	38.9	47.7
Non–fuel producers	10.9	10.3	8.9	10.7	13.6	11.0	12.8
Nonfragile states	14.6	15.9	14.4	16.6	18.0	17.2	18.6

Source: IMF staff.

Note: Unweighted country averages; e = estimate.

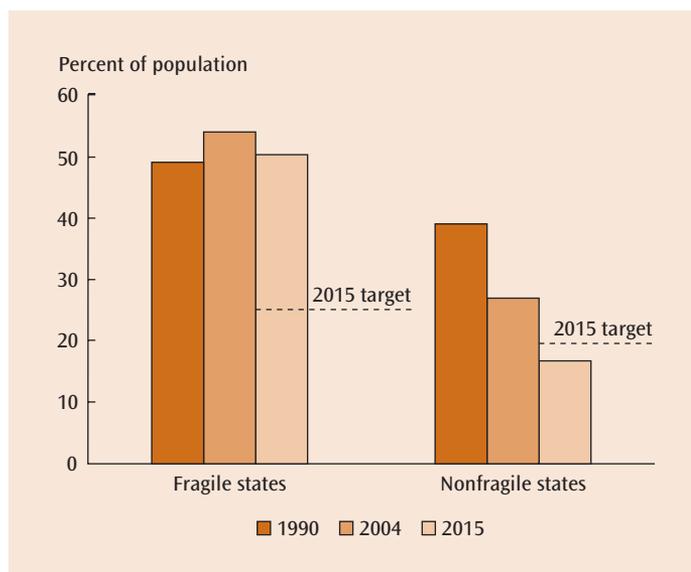
point lower than that experienced by low-income countries as a whole. Lower investment relative to GDP in fragile states linked in part to lower national savings rates (domestic savings and net transfers from abroad, including official transfers and worker remittances) has been one cause of their slower growth.

Clearly the inferior growth performance of fragile states has been, and is likely to continue to be, an obstacle to the achievement of MDG1. Fragile states by the LICUS definition are home to 9 percent of the population of developing countries, and have nearly twice the incidence of extreme poverty of other low-income countries. About 27 percent of the extreme poor in developing countries live in fragile states. Moreover, fragile states can have adverse spillovers on neighboring countries through conflict, refugee flows, organized crime, spread of epidemic diseases, and barriers to trade and investment.⁴

The rate of extreme poverty in the current set of fragile states is estimated to have risen somewhat in 1990–2004 from 49 percent to over 54 percent (figure 1.2). The projected poverty rate for this group of countries in 2015 is slightly higher than in 1990 under current assumptions about future growth and income distribution, suggesting that no overall progress will be made toward MDG1 over the goal period as a whole. In contrast, nonfragile states made significant progress in reducing poverty by 2004, and are projected to overachieve MDG1 by 2015.

Conflicts have undermined growth performance at various times in most fragile states. Conflicts are a major reason why countries slide into fragility; they extract high costs in terms of lives and physical damage, but also reduce growth and increase poverty. There is consensus in the relevant literature⁵ that civil conflict reduces gross domestic product (GDP) growth, although estimates of the size of this impact vary. The impact of conflict on growth and poverty incidence seems to have worsened since the beginning of the 1990s (see Staines 2005). Conflicts have become shorter and more intense than before; their average impact on GDP growth is now about

FIGURE 1.2 Rates of extreme poverty (percent)



Source: World Bank staff calculations.

–12 percent per year of conflict. While in the past, the fall in growth was more gradual, and was followed by a gradual and prolonged recovery within the conflict period, since 1990 the period of the growth collapse has largely coincided with that of the conflict, leading to this higher annual GDP loss. It has also taken longer for countries to regain their preconflict per capita income levels than would have been the case before 1990.

Because conflict is both a major cause and consequence of poverty in fragile states, the coherence and sequencing of international diplomatic, security, and development engagement is more important in these environments than elsewhere. Recent research (for example, Chauvet and Collier 2004) demonstrates that the risk of reversion to conflict is significantly higher in the period following postconflict elections than in the period preceding elections. This increased risk does not diminish for the first postconflict decade. In discussions of these results at the United Nations (UN) Peace-Building Commission, participants noted that this

risk may have important implications for the sequencing of electoral, peacekeeping, and development assistance, underlining the importance of efforts to ensure that electoral assistance in fragile transitions is properly sequenced with decisions to maintain or draw down peace-keeping troops, and with aid-financed efforts to support measures to generate growth and employment and other initiatives that may mitigate the risks of reversion to conflict.

Conflict aside, all fragile states have weak institutions and governance, hindering growth.⁶ Some states may be willing to promote growth and reduce poverty, but are unable to do so for a variety of reasons such as a lack of territorial control, political cohesion, and administrative capacity. In other states, governments may be unwilling to take necessary actions because they are not substantively committed to overall poverty reduction, or they may promote poverty reduction while excluding certain social or geographical groups.

State fragility has proven to be a persistent condition. Of the 34 states judged as fragile in 1980, 21 were still viewed as such in 2005, although of these, 6 had left and later resumed fragile status during the period. The average duration of fragility among the 2005 group of fragile states was 16.6 years. For the 20 countries that entered and permanently left the fragile states list since 1980, the average duration of fragility was 7.8 years. Of these, Mozambique experienced the shortest duration of fragility (3 years), and Niger the longest (15 years).

Nevertheless there are some success stories. Specifically, Vietnam, Mozambique, and Uganda have graduated from fragile state status. All three experienced severe violent conflict but managed to achieve a durable cessation of hostilities. Conflict ended either because there was a change in geopolitical conditions that provided incentives for warring parties to lay down their arms, or because there was a military victory by one party involved in the conflict that eliminated opposition groups or gave them a stake in the postconflict politi-

cal order. Subsequently in all three countries, growth was enabled by the introduction of at least modest programs of market-oriented economic reform that were managed so as to keep interested elites on board.

Limited capacity and willingness to undertake needed reforms in fragile states undermine the mainstream poverty reduction approach based on partnership as exemplified by the Poverty Reduction Strategy Paper (PRSP). Difficulties donors experience when working in these countries, particularly the ones with limited geopolitical relevance, can lead to excessively low or volatile aid flows even after taking into account the countries' low level of governance (see OECD/DAC 2005). The international community is increasingly aware of issues particular to fragile states, and has been considering alternative approaches tailored to the characteristics of specific countries, for example, emphasizing humanitarian assistance and relying where possible on help from nonstate actors such as nongovernmental organizations (NGOs). In this context, the OECD/DAC has recently issued a set of "Principles for good international engagement in fragile states."

Macroeconomic Performance

Continued good macroeconomic policies—as shown by continued low inflation and budget deficits—have helped underpin improved growth performance in low-income countries (table 1.4). At about 6.2 percent, median inflation in 2006 is estimated to have decreased from a 2005 peak of 7.2 percent associated with the sharp rise in oil prices, and is forecast to slow further in 2007. Since 2000, inflation has been substantially lower than 10 years earlier. The external indebtedness of low-income countries relative to GDP has also been declining, in part reflecting the impact of the Heavily Indebted Poor Countries (HIPC) Initiative and the Multilateral Debt Relief Initiative (MDRI). In 2006, the average debt-to-GDP ratio was 61 percent, compared to over 90

TABLE 1.4 Macroeconomic indicators for low-income countries
Annual averages, except where indicated^a

	1986-90	1991-95	1996-2000	2001-05	2006 est.	2007 proj.
Inflation (median annual %) ^b						
Low-income countries	7.1	14.3	6.8	5.4	6.2	5.3
<i>Fragile states</i>	10.2	19.8	9.1	7.7	6.8	5.5
<i>Nonfragile states</i>	6.3	11.4	6.2	4.9	5.9	5.2
Middle-income countries	9.9	18.0	6.8	4.4	4.6	4.6
External debt (% of GDP)						
Low-income countries	84.9	97.5	92.2	89.5	61.0	51.1
<i>Fragile states</i>	129.9	115.9	116.1	110.1	81.7	63.2
<i>Nonfragile states</i>	57.0	85.2	75.2	76.0	47.7	43.3
Middle-income countries	44.3	46.7	44.5	46.9	41.9	40.2
Fiscal balance (% of GDP)						
Low-income countries	-6.5	-6.9	-4.9	-3.5	0.4	2.2
Fuel producers	-8.7	-11.2	-5.6	6.7	23.9	58.7
Non-fuel producers	-6.4	-6.6	-4.9	-4.3	-1.6	-2.7
<i>Fragile states</i>	-10.0	-7.8	-4.9	-2.6	3.8	10.4
<i>Of which: Fuel producers</i>	-11.5	-12.1	-7.2	8.2	29.3	71.4
<i>Non-fuel producers</i>	-9.9	-7.1	-4.7	-4.5	-1.4	-1.8
<i>Nonfragile states</i>	-4.2	-6.3	-4.9	-4.1	-1.8	-3.2
Middle-income countries	-3.5	-2.7	-3.2	-2.6	-0.7	-1.2

Source: IMF staff.

a. Averages are calculated as unweighted means of country values.

b. Median inflation is calculated from the annual medians and then averaged over five-year periods.

percent throughout the 1990s. This decline is particularly apparent for HIPC countries that have passed the HIPC Initiative completion point, for which the external debt-to-GDP ratio in 2006 was half its average for 2001–05. The dramatic swing in average fiscal balances from a deficit to a small surplus in low-income countries in 2006 is mainly explained by sharp increases in oil revenues in a few fuel producers. However, in non-fuel-producing countries there has been a reduction in the size of fiscal deficits relative to GDP since the late 1990s.

Fragile states' macroeconomic indicators have tended to be inferior to those of other low-income countries. Until recently, inflation rates were on average at least 2.9 percentage points higher than in nonfragile states, possibly because of recourse in some countries to monetary financing of the budget. External

debt indicators are also higher, reflecting in some cases excessive past external borrowing. In addition, fragile states have found it difficult to satisfy the conditions for reaching the HIPC Initiative completion point and hence debt relief under the MDRI. Of the states classified as fragile in 2005, only three, Mauritania, São Tomé and Príncipe, and Sierra Leone, had reached the completion point as of end-March 2007. Although fuel-producing fragile states have recently attained large fiscal surpluses through high oil export revenues or oil-related fees and transfers, prior to the early 2000s, fiscal deficits relative to GDP among fuel-producing fragile states were consistently higher than in non-fragile states, reflecting limited fiscal discipline. Deficit ratios have, however, been similar in non-fuel producing fragile states to those of nonfragile states.

Quality of Macroeconomic Policies

For the fourth consecutive year, International Monetary Fund (IMF) staff have carried out assessments of the quality of macroeconomic policies in each low-income country (table 1.5). In addition to providing a snapshot of the quality of the main dimensions of macroeconomic policies for each year, these assessments can be used to evaluate developments since 2003, the first year of the exercise.

The assessment of fiscal policy continues to be mixed: almost 50 percent of countries have earned a good rating, but 21 percent are regarded unsatisfactory. A significant proportion of countries have moved out of the unsatisfactory category—a marked improvement compared to 2003. However, the composition of expenditures continues to be rated unsatisfactory in almost half of low-income countries. In contrast, access to foreign exchange, the quality of monetary policies, and the governance and transparency of monetary and financial institutions have consistently rated relatively well, with a majority of countries rated good and a relatively small percentage rated unsatisfactory. In addition, more than half the countries surveyed in 2006 received

favorable ratings regarding the consistency of their policy mix.

Consistent with the evidence on macroeconomic indicators, assessments of macroeconomic policies in fragile states are markedly more negative in some areas than those for low-income countries as a whole. The composition of public spending receives a much worse assessment in fragile states, reflecting the inappropriateness of expenditure composition for poverty reduction in these countries. The picture for monetary policy and the financial sector is more mixed. The quality of monetary policy is considered good for a similarly large proportion of fragile and nonfragile states, underlining the relative insulation of monetary authorities from weaknesses in administrative capacity. However, the governance and transparency of monetary and financial institutions is seen as worse in fragile states. That said, there is significant variance across the group: countries such as Timor-Leste, and more recently, Haiti and Liberia have made significant progress in this regard.

Although the assessments are not strictly comparable,⁷ the World Bank 2005 CPIA ratings of low-income-country macroeconomic

TABLE 1.5 Quality of macroeconomic policies in low-income countries, 2006
Share of countries falling into each category (percent)

Rating	Fiscal policy	Composition of public spending	Monetary policy	Consistency of macro policies	Governance in monetary and financial institutions	Access to foreign exchange
<i>2006 survey</i>						
Unsatisfactory	20.5	48.7	10.3	15.4	15.4	3.8
Adequate	33.3	38.5	19.2	32.1	28.2	12.8
Good	46.2	12.8	70.5	52.6	56.4	83.3
<i>2003 survey</i>						
Unsatisfactory	33.8	49.4	11.7	22.4	17.1	9.2
Adequate	19.5	32.8	11.7	28.9	22.4	13.2
Good	46.8	18.2	76.6	48.7	60.5	77.6
<i>Fragile states (2006)</i>						
Unsatisfactory	46.7	70.0	20.0	30.0	30.0	10.0
Adequate	26.7	20.0	10.0	30.0	33.3	20.0
Good	26.7	10.0	70.0	40.0	36.7	70.0

Source: IMF staff assessments.

policies are broadly similar to those of IMF staff. In particular, the CPIA ratings indicate less satisfaction with fiscal policies than with macroeconomic policies as a whole: 36 percent of countries were given a score of 3.0 or less for fiscal policy, compared with 21 percent for macroeconomic management. Roughly consistent with the relatively low assessments given by IMF staff for the composition of public spending, the CPIA also shows that 37 percent of all low-income countries and 78 percent of fragile states score 3.0 or less regarding the equity of public resource use.

Prospects for the Global Economy

The world economy is growing at a pace last seen at the beginning of the 1970s. This is welcome news for developing countries in view of its implications for trade, aid, private financial flows, and remittances. In 2006, the United States continued to expand at a strong pace, but global activity was more balanced owing to an acceleration of growth in European countries. The exceptional growth performances of China and India also continued. In the coming years, growth is expected to slow down slightly in most advanced countries, on the back of a gradual resolution of the large global current account imbalances that have been accumulating in the last decade.

However, the risks of growth slowdown remain, although the likelihood of these materializing has diminished recently. If the pace of economic activity were to translate into higher inflationary pressure in developed countries, this might trigger more dramatic rises in interest rates than experienced so far, with the attendant danger of a sharp slowdown in these countries' growth. The unwinding of global imbalances, and in particular of the exceptionally large U.S. trade deficit, could also take place at a much faster pace than expected, if the U.S. economy were to slow down significantly, following, for example, an acceleration in the fall of housing prices. The future behavior of world oil prices is another area of uncertainty. While further sharp increases are not anticipated,

they cannot be ruled out in view of possible stronger-than-expected demand and the ongoing instability in the Middle East. There is also a danger that protectionism could rise in the years ahead, reversing some of the gains from an increasingly integrated global economy. Lastly, the chances of a global pandemic derived from avian influenza remain.

There are also some risks that could impinge more directly on the growth prospects of developing countries. As noted above, the negative impact of high oil prices on many non-fuel-commodity-exporting developing countries has been limited by the improvement in their terms of trade arising from strong demand growth. In the future, however, while a fall in oil prices is unlikely, a relative decline in non-fuel-commodity price could occur. In addition, a rise in real interest rates in developed countries could create turbulence in emerging-market financial sectors, with possible adverse macroeconomic consequences.

Need to Make Progress in Other Areas

To sustain and accelerate growth and poverty reduction, developing countries will not only need to maintain and, in many cases, improve their macroeconomic frameworks, but also make efforts in other areas. This chapter monitors progress in two such areas, the private investment climate and governance.

Monitoring the Investment Climate

The World Bank monitors the investment climate through two main vehicles: the Investment Climate Surveys (ICS) and the Doing Business (DB) surveys. The former draws data from firms, while the latter relies on the views of experts.

In 2006, new firm-level ICS data became available for 27 countries, bringing the total to 73,000 firms in 104 countries. The year marked the beginning of a shift to regional rollouts of the surveys, with 8 Latin American countries and 17 Sub-Saharan countries covered in the latest round. Several fragile states

(Burundi, Democratic Republic of Congo, Côte d'Ivoire, Guinea, Guinea-Bissau, and Mauritania) were included. Key areas of interest in Latin America include innovation and technology. The Africa report focuses on issues of competitiveness, gender, and the extent to which the investment climate can compensate for geographic challenges such as being landlocked or natural resource intensive.

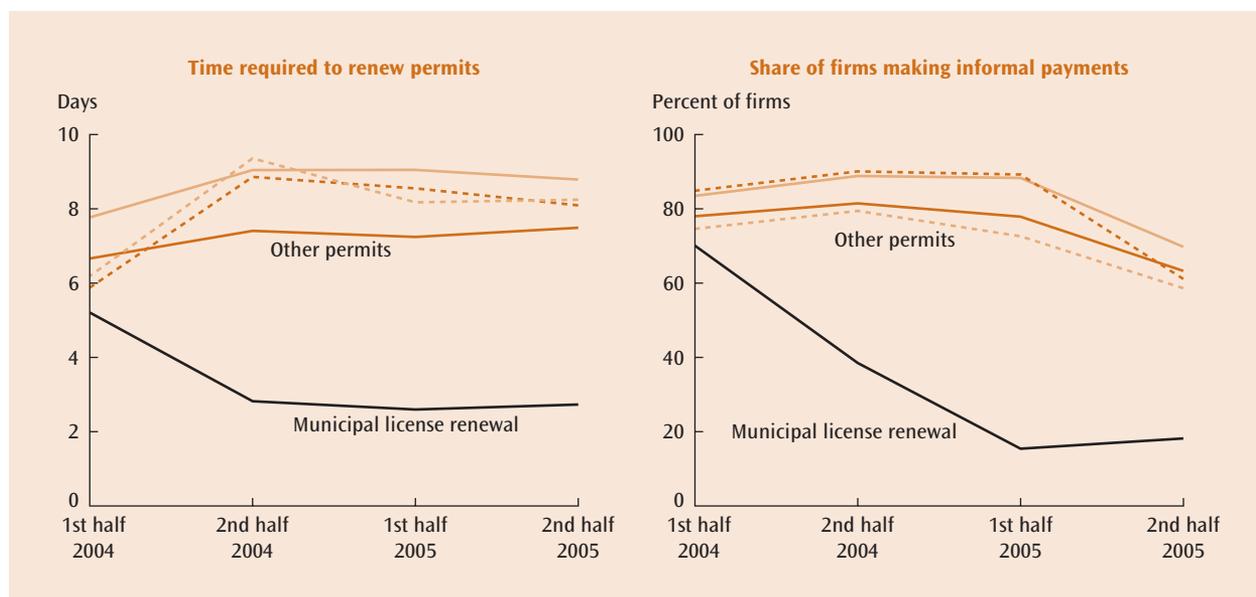
Several countries are now collecting follow-on surveys, making it possible to evaluate changes in the investment climate and policy reforms. For example, a survey was fielded in Egypt in 2004 prior to a series of reforms of the tax system, licensing, permits, and customs. The 2006 survey picked up clear indications of the impact of these reforms. Whereas taxes had ranked as the top constraint in 2004, it became only the fifth-highest constraint in 2006. Significantly, there were fewer inspections by tax authorities and fewer petty bribes associated with taxes. In addition, streamlining of licensing permits led to a decline in the time to get an operating license from 3.3 months to 2.0 months.

Moreover, petty bribery associated with permits and with customs clearance declined. While corruption remains an issue, there is evidence of significant progress.

In Bangladesh, a set of firms were surveyed every six months for three years. The impact policy change can be seen in international trade reforms, licensing reforms, and tax reforms. With the end of the Multi-Fiber Agreement, international competition in garments and textiles intensified as reflected in falling garment export and textile input prices. The demand for skilled workers also rose, with skilled workers receiving higher wage increases, and firms reporting greater delays in hiring new skilled workers. In addition, the automation of municipal licensing through a new interface provided by the Dhaka Chamber of Commerce and Industry resulted in dramatic declines in the time taken to renew business licensing permits through Bangladesh's Municipal Corporations. There was also a decline in the incidence and value of bribes (figure 1.3).

The 2007 *doing business* indicators measure the status of *de jure* business environ-

FIGURE 1.3 Regulatory reforms can increase efficiency and reduce corruption



Source: Hallward-Driemeier (2006): Bangladesh Panel Survey.

ment in which private firms operate, with commonly defined indicators across 175 countries. The goal is to benchmark and monitor efforts to improve the business climate and provide policy makers with a set of indicators as to how they compare with other country practices. Donors and foreign investors can make use of the indicators to measure progress in them. The transparency and simplicity of the indicators also facilitate efforts to identify areas of inefficiency and shortcomings in country regulatory frameworks. While there are many other factors affecting investors' decisions, improvement of the regulatory environment can have spill-over benefits on other areas of public policy, further improving the attractiveness of good reformers in the eyes of investors.

The 2007 *Doing Business* report recognized the accomplishments of countries that were able to improve their regulatory environments. Georgia was 2006's most impressive reformer, making reforms in 6 of 10 areas studied by *Doing Business* and improving its world ranking on the ease of doing business from 112 to 37 in the span of one year, pointing to the capacity of countries to quickly and significantly progress. Mexico and Romania also improved their rankings through major reforms. The African region, which had been the slowest-reforming region in the previous two reports, picked up pace in 2006, and, with the exception of Europe and Central Asia made more progress than other developing-country regions. Tanzania and Ghana were Africa's top reformers, but others also made significant progress. Many of the reforms in Africa were easy, stroke-of-the-pen reforms—one simple reform in Côte d'Ivoire cut the time it takes to register property from 397 days in 2005 to 32—although more difficult reforms will soon be necessary. Other countries, including two fragile states, Zimbabwe and Timor-Leste, were identified as having deteriorating business environments. Eritrea, another fragile state, was noted as having the single worst reform of the year, which suspended all construction licenses and prohibited private businesses from entering the construction sector.

Monitoring Governance Trends

The 2006 GMR highlighted governance monitoring as a core ongoing part of the broader task of monitoring progress in reaching the MDGs. The 2006 analysis underscored the following:

- Governance is multidimensional, with no unique path from weaker to stronger governance. The quality of bureaucracy and of checks-and-balances institutions comprise two broad dimensions along which governance might change, with the pattern of change varying from country to country.
- Governance monitoring is an imperfect science. All measures have margins of error. It would be a mistake to read significance into small differences across countries or modest changes over time.
- Monitoring at aggregate levels, using broad measures, can provide an overview of trends in governance change and cross-country patterns. But efforts at reform invariably focus on specific governance subsystems, and (unless they can be disaggregated) broad measures are too imprecise to be useful for monitoring whether specific interventions create progress.
- There is strong potential for monitoring at a disaggregated level, “using specific measures of the quality of key governance subsystems, and using the results as ‘actionable indicators’ to identify specific strengths and weaknesses in individual countries.” The 2006 GMR advocated strongly for greater investment in developing such measures.

Broad Governance Trends in Low- and Middle-Income Countries, 1996–2005

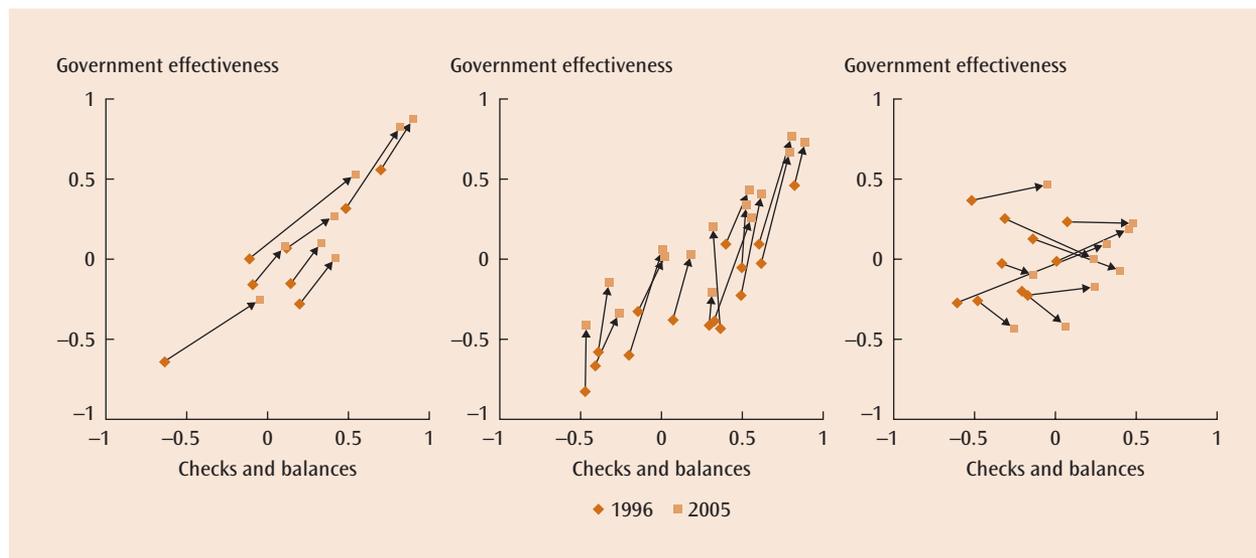
The 2006 GMR identified schematically three distinct trajectories of governance improvement: disproportionate gains in bureaucratic capability, disproportionate gains in checks-and-balances institutions, and balanced gains. The 2006 GMR also suggested ways to measure both bureaucratic capability⁸ and

FIGURE 1.4 Trajectories of Governance Improvements

TRAJECTORY I: Balanced—Significant Improvements in both Government Effectiveness and Quality of Checks and Balances Institutions

TRAJECTORY II: More Improvement in Government Effectiveness

TRAJECTORY III: More Improvement in Quality of Checks and Balances Institutions



Countries: Nigeria, Mozambique, Mexico, Mali, Croatia, Slovenia, Slovak Republic, and Estonia.

Countries: No significant improvement in Quality of Checks and Balances Institutions: Turkey, Ukraine, Hungary, Belarus, Bulgaria, Azerbaijan, Paraguay, Panama, and Madagascar. Quality of Checks and Balances Institutions saw significant improvement, but the improvement in the Government Effectiveness dimension is double or more the size of improvement in the Checks and Balances dimension: Russia, Tajikistan, Romania, Tanzania, Lithuania, and Latvia.

Countries: No significant improvement in Government Effectiveness dimension: Ghana, Kenya, Bhutan, The Gambia. Government Effectiveness dimension saw significant improvement, but the improvement in the Quality of Checks and Balances dimension was double or more the size of improvement in the Government Effectiveness dimension: Serbia, Senegal. Significant decline in Government Effectiveness dimension: Peru, Indonesia, Syria, Sierra Leone.

Sources: Kaufmann, Kraay, and Mastruzzi 2006; Polity IV Database 2005.

the quality of checks and balances.⁹ Figure 1.4 uses aggregate governance indicators to depict empirically these three trajectories of improvement for 1996–2005. Forty-four of the 111 countries experienced governance changes that were both relatively large and at least moderately significant.¹⁰

The measures are sufficiently loosely defined,¹¹ and the margins of error of the estimates sufficiently large, that the results are best viewed as heuristic. Even so, the systematically divergent patterns across the three sub-figures¹² seems to underscore that there is no unique path from poor to good governance:

- Eight countries—including three in Africa and three in Eastern Europe—improved governance in a balanced manner over the course of the decade.
- Fifteen countries—including 10 from Eastern Europe or the former Soviet Union—improved mostly in bureaucratic capability/government effectiveness.
- Ten countries saw disproportionate improvement in the quality of their checks-and-balances institutions. In four of these (Indonesia, Peru, Sierra Leone, and Syria) the gains in accountability were offset by declines in bureaucratic capability/government effectiveness. Four of the six countries

that improved checks and balances over the decade without a corresponding decline were in Sub-Saharan Africa (The Gambia, Ghana, Kenya, and Senegal).

- Eleven countries, of which six are currently classified as fragile states, experienced governance declines in at least one dimension without improvement in the other. For five of these (Central African Republic, Côte d'Ivoire, Eritrea, Nepal, and Zimbabwe) the declines were both relatively large and moderately significant across both dimensions; for three (Argentina, Guinea-Bissau, and the Lao People's Democratic Republic) the declines were mostly in bureaucratic capability; and for the remaining three (Ecuador, Guyana, and República Bolivariana de Venezuela—all in Latin America) mostly in the quality of checks-and-balances institutions.

The data suggest broadly divergent patterns among African countries relative to countries in Eastern Europe and the former Soviet Union in the trajectories of governance reform. The most common improvements were, in the former group, a further consolidation of the political openings of the early 1990s, and in the latter group, gains mostly in government effectiveness. Country-specific starting points thus surely matter in shaping the agenda for governance change, although understanding of these dynamics is still in its infancy. Tracking the impact of specific governance reforms requires more disaggregated “actionable” indicators.

Growing Momentum for Actionable Governance Indicators

Over the past year, initiatives by independent civil society organizations, work within the World Bank Group, and multidonor initiatives all have contributed to progress in the development of specific governance indicators that, given repeated measurement over time, can be used to monitor operationally, in a disaggregated way, the effectiveness of efforts to strengthen governance subsystems.

Independent civil society organizations made a variety of noteworthy contributions to the monitoring of the quality of checks-and-balances institutions, three of which are illustrated here. First, in May 2006 the Afrobarometer network released the results for 18 African countries of its third round of surveys. Afrobarometer provides scientifically reliable data, comparable across countries and over time, on citizen perceptions vis-à-vis a variety of governance issues including popular understanding of, support for, and satisfaction with democracy; the demand for, and satisfaction with effective, accountable, and clean government; satisfaction with education, health, and local government services; and citizen participation in both democratic processes and development efforts. Second, in January 2007, Global Integrity (whose GII index was introduced in the 2006 GMR) released 43 additional country reports. These included follow-up reports for 17 of the 25 countries surveyed in the initial, 2004 round.

The third contribution by civil society was the release in October 2006 (after four years of work) by the International Budget Project of a new index to monitor the transparency of public budgets. As with the GII, the Open Budget Index is based on a combination of expert assessments and peer review at both country and global levels. Key findings include the following:

- Only 6 of 59 countries surveyed—France, New Zealand, Slovenia, South Africa, the United Kingdom, and the United States—were reported as consistently providing “extensive” budget information to citizens in their budget documents. An additional 30 countries provide “significant” or “some” budget information.
- Twenty-three countries were reported as providing “minimal” or “scant or no” information—with 10 countries (Angola, Bolivia, Burkina Faso, Chad, the Arab Republic of Egypt, Mongolia, Morocco, Nicaragua, Nigeria, and Vietnam) in the latter, weaker category.

- In 32 of the countries surveyed, the government does not make available to the public information it is already producing for its own internal use or for donors. Thus, many countries could sharply improve their transparency and accountability simply by providing information they already produce to the public.

The World Bank Group has made three sets of contributions. First was the publication, for the first time (but only for low-income countries), of disaggregated CPIA scores. The 2006 GMR detailed the potential for using some of the CPIA results—especially those on public financial management, on the quality of public administration, and on property rights and the rule of law—as governance measures. As these data have long been used in the allocation of International Development Association (IDA) resources, their release is an important contribution not only to the endeavor of governance monitoring, but also to the transparency of the international financial institutions (IFIs). The second contribution was the release of the 2005 updates for both the Doing Business (DB) indicators and the Kaufmann-Kraay/World Bank Institute (aggregate) governance indicators; for the first time, the detailed indicators used to construct the KK measures have also been made available on the KK/WBI Web site. The third contribution was in systematizing and scaling up further its efforts on enterprise surveys. Prior to 2006, only in Europe and Central Asia were surveys systematically done across all countries within a region, rather than on a demand-driven country-by-country basis. Regional rollouts currently are under way worldwide, including for 30 countries in Africa and 15 in Latin America. As of February 2007, enterprise survey results were available on a new streamlined Web interface for 100 countries—up from only 37 a year earlier. Research is under way that links the DB and Enterprise Survey (ES) results.

Multidonor initiatives have resulted in significant progress on two sets of indicators: the Public Expenditure and Financial Account-

ability (PEFA) public financial management indicators, and the OECD/DAC work on procurement. Use of the PEFA indicators (which were described in depth in the 2006 GMR) has expanded rapidly. As of October 2006, public financial management assessments had been completed (to the point of final draft reports) in 33 countries and were under way in an additional 15, and 34 more assessments had been planned (but not yet begun). In July 2006, following a long gestation period, the OECD/DAC Joint Venture for Procurement published a revised tool—*Methodology for Assessment of National Procurement Systems (version 4)*—and an accompanying guidance note for scoring each of its 54 indicators on a four-point scale. The tool has successfully been piloted in five countries (Albania, Bangladesh, Ghana, the Philippines, and Turkey) and is currently being used in 15–20 more. So far, however, these multidonor initiatives have been characterized by a notable disconnect between scaled-up in-country efforts (that have made an important contribution to harmonized monitoring at country-level of trends in the quality of public expenditure management), and transparent availability of the fruits of that effort.

For PEFA (table 1.6), only 8 of 45 “substantially completed” assessments have so far found their way into the public domain, and even those have been made available only as individual reports, with no effort to consolidate and contrast the results. The remaining reports, although their drafting apparently has been finalized, currently are in a consultation (or postconsultation) limbo; the problem is seemingly especially acute for assessments led by the World Bank or the European Commission. The OECD/DAC-sponsored work on procurement assessments is less advanced than PEFAs. But here too, there are no plans to make available in a consolidated way the results of the ongoing country-level work.

Underlying this caution is a concern among donors as to how the findings will be used. In particular, there is a fear that cross-country comparisons will be used to construct new “red-lines”—absolute thresholds as to which

TABLE 1.6 Status of “finalized” PEFA assessments (as of February 23, 2007)

Number of assessments	WB leading	EC leading	WB and EC jointly leading	Other agency leading	Total assessments
Substantially completed draft/final report	20	16	1	8	45
Of which final report completed	4	11	0	4	19
Of which final report in the public domain	4	2	0	2	8

Source: PEFA Secretariat.

countries should receive aid, and the form in which that aid should be provided. This fear is misplaced. Certainly, it is not relevant for the World Bank Group—where the performance-based allocation system (using the CPIA) is the basis for allocation of IDA resources. More broadly, as highlighted in the 2006 GMR, there is a growing consensus that scaling up aid, and moving to country systems, principally should be based not on absolute thresholds but on *country-specific trends* in the quality of these systems, as evidenced by improvement in actionable indicators.

Growth, Poverty, and the Environment

The Environment as a Source of Growth and Poverty Reduction

Higher economic growth is clearly desirable, but rather than a goal in and of itself, it should be a process of increasing the wealth of present and future generations. Defining wealth as including not only physical and human capital, but also natural assets, leads to concerns that current rates of depletion and degradation of natural resources may be undermining the sustainability of higher growth, particularly in developing countries. Such concerns have motivated four recent major reports on environmental issues (box 1.2).

A distinguishing characteristic of developing countries is their high dependence on natural resources. When agricultural land, minerals, energy resources, and forests are

taken into account, the share of natural resources in total wealth is substantially higher than produced capital in the poorest regions—Sub-Saharan Africa and South Asia—and in the oil-producing countries of the Middle East and North Africa. In lower-middle-income countries the shares of produced and natural capital in total wealth are roughly equal. Only in upper-middle-income countries is there a consistently higher share of produced capital compared to natural capital in total wealth. For a broad spectrum of developing countries, the effectiveness of natural resource management can therefore have a significant impact on development prospects and performance.

As noted in the introduction to this chapter, countries are liquidating assets when they extract minerals and energy, harvest forests and fish unsustainably, or deplete their agricultural soils. This liquidation of natural assets is obscured in traditional national accounts measures, such as gross national income (GNI), which treat depletion and depreciation as part of income. Careful analysis of the net rate of wealth creation presents a very different picture of economic performance. In Sub-Saharan Africa, for example, the net creation of wealth has been effectively zero over the last three decades, a period in which total population more than doubled. In countries such as Cameroon, Benin, Burkina Faso, Mozambique, and Rwanda, low saving effort, resource depletion, and high population growth combined to yield net reductions in wealth per capita of more than 10 percent of GNI in 2000.

BOX 1.2 Current issues in the environment debate

Four recent reports have highlighted the urgency of many environmental and natural resource problems globally, and helped to link environmental factors to development outcomes.

The Millennium Ecosystem Assessment: Ecosystems and Human Well-Being (MA)

One of the central messages of the MA, a multiyear nongovernmental process involving nearly 1,400 experts, is that the unprecedented exploitation of ecosystems is rapidly destroying those ecosystems' abilities to continue providing services that are essential to our well-being. For example, in recent years, human activity has enhanced the ability of the ecosystem to provide crops but decreased the ability of marine fisheries to provide fish, a consequence of overfishing. The MA concludes that such unsustainable activity will prevent future generations from enjoying the benefits of certain ecosystem services. It also highlights the importance of valuing ecosystem services appropriately compared to the more common practice of valuing them primarily for the services that can be exploited for more private and immediate gains, including from revenues from harvested timber and food. The content and lessons of the MA are directly relevant to the pursuit of sustainable poverty relief.

The Stern Review on the Economics of Climate Change

This review provides a thorough analysis of how climate change may impact the world economy and what can be done to minimize its costs. The review estimates that irreversible damages to the world from unabated climate change could entail a cost equivalent to a permanent drop of 5–20 percent of global per capita consumption depending on the climate scenario, with that cost being disproportionately borne by the poorest people. This drop in GDP could cause as many as 220 million people in Africa and South Asia alone to remain below the \$2-a-day poverty line at the century's end, with equally severe impacts on human development indicators. Changing precipitation patterns, extreme temperatures, increasingly violent storms, and rising sea levels could also lead to massive migration and increased conflict, compounding the misery of already suffering populations.

The review argues that significant and immediate action can greatly reduce the likelihood of the direst scenarios. The cost of action to stabilize the climate at moderate levels of warming would be a permanent 1 percent drop in global per capita consumption. The review also advocates that the international community needs to invest more in adapting to climate change because the global temperature has already risen by 0.7° C, and will increase more because of the presence of past and projected emissions. Adaptation will be particularly difficult for people in low-income countries, and “should be an extension of good development practice,” including promotion of growth and economic diversification, and investing in education, health, water management, and disaster preparedness.

While there has been an active debate over the assumptions and conclusions of the review, the importance of the issue calls for greater attention, possibly in future GMRs.

Where Is the Wealth of Nations?

This World Bank study aims to increase understanding of the role of natural resources and the environment in the development process. It provides a comprehensive analysis of the different sources of wealth in developed and developing countries, and reveals some strong tendencies in wealth composition: (1) in low-income countries natural resources are a much larger share of total wealth than produced capital—29 percent compared with 16 percent; (2) agricultural land makes up two-thirds of the natural capital of low-income countries; and (3) the largest share of wealth across all income classes consists of less tangible items such as human and institutional capital.

The study shows that the majority of low-income countries are actually dissaving in per capita terms when resource depletion and population growth are taken into account. Policy responses for donors and developing countries include placing greater emphasis on improving natural resource

continued

BOX 1.2 Current issues in the environment debate (continued)

management, such as efforts to preserve soil quality in agriculture; reducing incentives to over-exploit natural resources, particularly living resources; and balancing investment in the overall portfolio of natural, produced, human, and institutional capital.

At Loggerheads? Agricultural Expansion, Poverty Reduction, and Environment in the Tropical Forests

This World Bank Policy Research Report discusses the dual goals of preserving rapidly shrinking tropical forests and relieving the poverty of the hundreds of millions of people who live in and near them. The report emphasizes that the causes of deforestation are varied. Some forests are cleared to expand commodity production in order to meet the demands of wealthy urbanites. Other forests are cleared by poor people who rely on expanding low-productivity agriculture. Timber prices have a more ambiguous effect as they often encourage sustainable management of timber rather than clear-cutting.

The consequences of continued high rates of deforestation include the annual emission of 3 billion tons of CO₂, the disappearance of entire ecosystems and the species that inhabit them, and widespread changes in water flows, scenery, microclimates, pests, and pollinators. To reduce deforestation the report discusses the pros and cons of different land management strategies—protected areas, regulated logging concessions, community forest management—and their appropriateness in different contexts.

The policy recommendations in the report include building local institutions and social capital in forested areas, particularly among indigenous groups and communities that will collectively manage forests. The report stresses the need to mobilize international resources, especially conservation and carbon finance. Two cross-cutting recommendations include equitably assigning property and land use rights where they are weak or absent and, as recommended in the Millennium Ecosystem Assessment, actively encouraging markets for environmental services at local, national, and international levels.

Natural wealth is a potential contributor to growth and poverty reduction, but policies, institutions, and political economy can all influence the strength of the contribution. Exports of commercial natural resources (minerals, energy, forest products, and fish) are a source of development finance, but many countries do not use this finance effectively, and are consuming resource rents rather than investing them. Nature tourism is a growing source of exports in many countries, but government policies often hamper the expansion of the sector. The productivity of agricultural land—55 to 65 percent of the value of natural resources in developing countries—has a profound impact on growth and poverty, particularly in low-income countries. For poor households, the environment and natural resources contribute directly to health, livelihoods, and vulnerability. For women in par-

ticular, the management of natural resources has significant impacts on welfare (box 1.3).

While natural resources can potentially make large contributions to growth and poverty reduction, they present specific risks as well. Commodity boom and bust cycles can stress fiscal systems and increase the volatility of exchange rates. “Easy money” in the form of resource rents can reduce the impetus for economic reforms. The evidence suggests that a combination of sound macroeconomic policies and strong sectoral policies and institutions is required in order to parlay natural resource wealth into successful development.

Update of Key Indicators

MDG7 calls for integrating the principles of sustainable development into country policies and reversing the loss of environmental

BOX 1.3 Gender and the environment

In most regions women are more commonly burdened with handling domestic work. Children, especially girls, also spend much of their time helping with these tasks. A major component of domestic work is retrieving water and firewood for the home. The amount of time and effort needed to complete these tasks is highly dependent on environmental conditions. For homes with access to piped water and modern fuels, the time burden can be minimal. However, in places where water and fuel are more difficult to access these tasks can take hours every day, reducing the amount of time women and girls can spend on other activities, including out-of-home employment or school. Deforestation and pollution of water resources exacerbate the problem, requiring people to continually travel longer distances to fetch firewood or potable water (Barwell 1996).

Malawi is a country where access to water and firewood is particularly critical and also precarious. More than 90 percent of people use fuel wood as their main source of cooking energy. During the 1990s, Malawi's deforestation rate was 3 times that of the rest of Sub-Saharan Africa's and 10 times that of the world as a whole, making this vital resource more difficult to access. Malawi is also expected to experience a water crisis by 2025 that will make this resource scarcer. As noted above, these developments are likely to decrease female school attendance and performance compared to those of boys. This result suggests that the gender disparity in schooling may not be the result of conscious discrimination but instead of traditional gender inequalities in the division of labor (Nankhuni 2004).

Additionally, some environmental health hazards fall disproportionately on women. Exposure to indoor air pollution, especially particulates, is a major factor causing lower-respiratory infections, the leading cause of death from infectious diseases. Women are at greater risk than men because they are more commonly responsible for household tasks that expose them to indoor air pollution, such as cooking with biomass fuels. A Kenya study shows that young and adult women are exposed to, respectively, 2.5 and 4.8 times the particulate matter that men are exposed to in their age groups (Ezzati and others 2000). Correspondingly, the acute respiratory infection rate for women was twice that of men (Ezzati and Kammen 2001).

Projects that reduce indoor air pollution, promote reforestation, and improve water quality are often thought of as environmental projects that help serve the health and economic interests of local populations. However, these projects, if well targeted, can have disproportionate benefits for women, because they can ease burdens that have traditionally reduced women's ability to participate in more empowering activities.

resources. Given the high resource dependence of many developing countries, there is a strong link between this goal and that of reducing poverty. Table 1.7 provides an update on key indicators in the context of trends of the past 15 years. The indicators chosen—adjusted net saving, rates of deforestation, CO₂ emissions, and reliance on biomass fuels—aim to represent both a general view of sustainability and the progress in specific areas relevant to development. “Adjusted net saving” measures countries' net saving effort after accounting for depletion and damage to the environment, thus providing an indicator of the sustainability of development.¹³ For-

est loss is crucial because of the environmental goods and services provided by forests, including CO₂ sequestration. CO₂ emissions contribute to global climate change, a long-run threat to development. Household reliance on traditional biomass energy affects both pressures on forest resources and damages to human health from indoor exposure to smoke.

Each of these indicators entails specific policy goals: (1) for adjusted net saving the aim is to achieve positive saving rates that are consistent with growth targets; (2) goals for CO₂ emissions are driven by the individual targets for the industrialized

TABLE 1.7 Key indicators of environmental sustainability

Group	Adjusted net saving			Carbon dioxide emissions		Annual deforestation		Use of traditional fuels	
	Percent of GNI			Metric tons per capita		Forest cover lost 1990–2005		Combustible renewables and waste (% of total energy)	
	2005	of which, global damages caused by CO ₂ emissions	Annual change (percentage points, 1990–2005)	2003	Percent increase 1990–2003	Annual area lost (sq km)	Annual percent lost	2004	Annual change (percentage points, 1990–2004)
World	7.4	0.4	–0.19	4.0	–0.2	83484	0.14	10.3	–0.03
Low income	6.2	1.0	0.24	0.9	1.6	71694	0.59	44.9	–0.53
<i>Fragile states</i>	–25.1	0.8	–0.57	0.5	–2.0	31799	0.56	78.1	0.07
<i>Non-fragile states</i>	11.0	1.0	0.31	1.0	2.5	39891	0.62	39.1	–0.76
Middle income	9.5	0.9	–0.12	3.9	–0.4	18288	0.03	9.0	–0.08
Low & middle income	8.0	1.0	–0.01	2.4	–0.6	90621	0.21	17.5	–0.07
East Asia & Pacific	25.3	1.2	0.45	2.7	1.3	4939	–0.22	16.1	–0.61
Europe & Central Asia	–2.0	1.2	–0.89 ^a	6.9	–3.1	–1789	–0.02	2.4	0.04 ^c
Latin America & Caribbean	3.7	0.4	–0.11	2.4	0.4	45753	0.44	14.8	–0.25
Middle East & North Africa	–13.0	1.2	–0.92 ^b	3.4	2.4	–747	–0.49	1.2	–0.04
South Asia	16.4	1.1	0.64	1.0	3.0	–831	–0.18	38.0	–0.79
Sub-Saharan Africa	–7.3	0.7	–0.20	0.8	–0.8	43296	0.58	55.7	–0.01
High income	7.7	0.3	–0.21	12.8	0.7	–7137	–0.09	3.1	0.01
High income: OECD	8.2	0.3	–0.19	12.8	0.6	–7041	–0.09	3.3	0.01

Source: World Development Indicators.

Note: Carbon dioxide figures refer to emissions from combustion of fossil fuels and cement manufacture.

a. Annual change refers to the period 1995–2005.

b. Annual change refers to the period 1993–2005.

c. Annual change refers to the period 1992–2004.

country signatories to the Kyoto Protocol of the UN Framework Convention on Climate Change, which aims to reduce global emissions by 5.2 percent from 1990 levels by 2012; (3) bringing deforestation down to zero is the appropriate policy goal for many countries, preserving the environmental services provided by forests and protecting the sustainable flow of timber and nontimber products derived from natural forests; and (4) reducing and ultimately eliminating household use of traditional biomass fuels through provision of affordable substitutes.

Saving Rates across the World

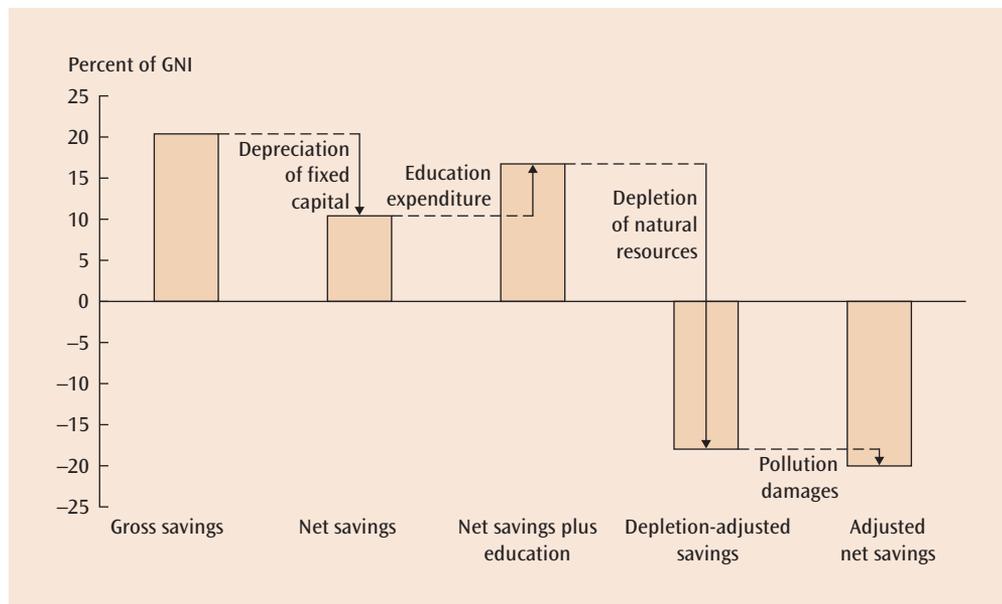
Saving is a core aspect of development. Without the creation of a surplus for investment,

countries cannot escape a state of low-level subsistence. In an effort to comprehensively assess a country's rate of saving, "adjusted net saving" modifies traditional saving measures to take into account depreciation of produced capital, the depletion of natural resources, pollution damages, and investment in human capital (box 1.4). Negative saving rates are a clear indication that an economy is not on a sustainable path. Figure 1.5 shows trends in gross and adjusted net saving over time.

In East Asia and the Pacific and in South Asia, adjusted net saving has been steady at about 20 percent and 10 percent, respectively, owing to strong saving efforts. In Sub-Saharan Africa, it has been hovering around zero. Latin America and the Caribbean and Europe and Central Asia have had modestly positive

BOX 1.4 Adjusting saving rates to reflect a wider range of assets

The following figure presents the calculation of adjusted net saving in Bolivia in 2005.



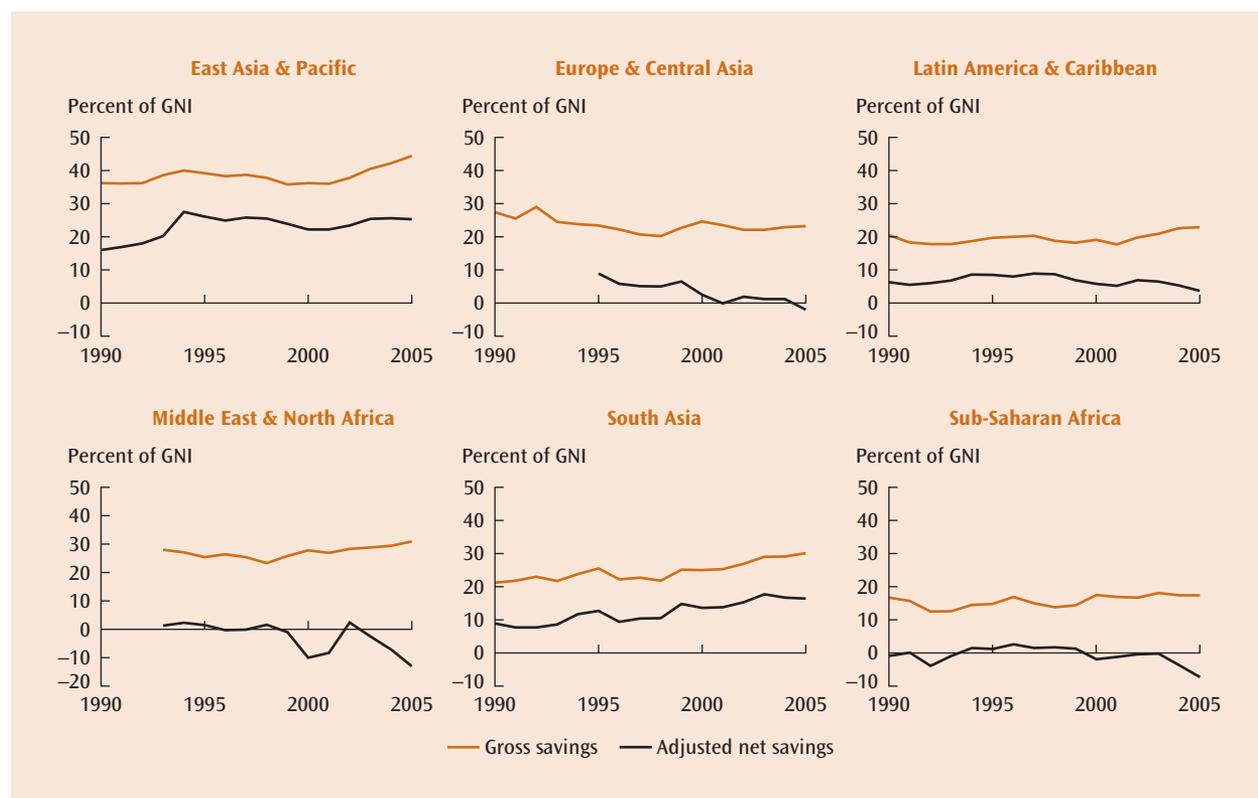
Source: World Development Indicators.

Gross saving in Bolivia in 2005 was roughly 20 percent of GNI. This falls to 10 percent when depreciation of fixed capital is deducted, but the drop is partially offset by investment in human capital (as measured by education expenditure). Deducting the depletion of natural resources (mostly natural gas in Bolivia's case) and damages from emissions of PM10 (particulate matter less than 10 microns) and CO₂ leads to the bottom-line value of -20 percent of GNI as the adjusted net saving rate of Bolivia. In net terms the country is consuming wealth, with negative consequences for potential growth.

As just noted, while adjusted net saving focuses primarily on the net accumulation of wealth within a country's borders, it also accounts for damages inflicted on all countries when a unit of CO₂ is emitted. This overall approach to accounting is based on two assumptions about property rights: (1) that countries own the natural assets lying within their borders, and (2) that countries have the right not to be polluted by their neighbors. The latter assumption is what underpins the Kyoto Protocol. If countries have the right not to be polluted by their neighbors, then the economic accounts of pollution emitters should show a charge for the damage inflicted—these figures are broken out in table 1.7. With the conservative carbon price used in the saving calculation (\$24 per metric ton of carbon), these damages vary from 0.3 percent of GNI in high-income countries to 1.0–1.2 percent in most developing regions. This largely reflects the efficiency of energy use in the different regions.

saving rates over time. However, in Europe and Central Asia there has been a downward trend in saving owing to an increasing extraction of oil, which has not been offset by an

equivalent increase in gross saving. Resource rents are clearly being consumed in many of these countries. While not shown in figure 1.5, adjusted net saving rates in high-income

FIGURE 1.5 Adjusted net saving rates by region

Source: World Development Indicators.

countries have fallen steadily from nearly 20 percent in the early 1970s to less than 10 percent in 2005—this is largely a reflection of falling gross saving rates.

For countries with growing populations, there is an additional factor not included in table 1.7—the reduction in wealth *per capita* associated with each new population cohort. For a population growth rate of 2 percent per year this “wealth dilution” effect would imply a deduction from wealth per capita on the order of 10–12 percent of GNI in a typical developing country. The change in wealth per capita is negative in the majority of low-income countries, often by significant proportions of GNI.

Low or negative adjusted net saving places growth at risk. The policy responses to insufficient saving include (1) reducing government

dissaving, a common source of low gross saving rates; (2) investing more in human capital; (3) reducing incentives to overexploit natural resources, particularly forests and fish; and (4) reducing excess pollution emissions through market-oriented policies.

Energy: From Global to Local Issues

Carbon dioxide emissions from fossil fuel combustion and cement manufacture worldwide topped 27 billion metric tons in 2003, an increase of 19 percent compared to 1990 levels. In the absence of policy interventions, this trend will likely continue as economic activity grows. China, which is already the second-largest emitter, has increased its emissions per capita by 52 percent between 1990 and 2003, while India’s emissions per capita

have grown 50 percent in the same period—note, however, that the 2003 level of emissions per person in each country is still a fraction of high-income-country levels.

The major part of CO₂ emissions from fossil fuel combustion and cement manufacture stems from rich countries, however, with the United States contributing 22 percent of total emissions, the European Union 9 percent, and Japan 5 percent in 2003. But the share of developing-country contributions is rapidly increasing. From 2000 to 2003, global CO₂ emissions increased by 2.9 percent annually, and about 83 percent of this increase came from low- and middle-income countries. If CO₂ emissions from deforestation and CO₂-equivalent emissions from agriculture are included, the annual contribution of developing countries to greenhouse gas concentrations exceeds that of high-income countries.

The lowest level of CO₂ emissions per capita is in Sub-Saharan Africa. This is mainly driven by the lack of access to modern sources of energy, which leads people in poor countries to depend on traditional biomass fuels for their energy needs. Solid biomass is associated with respiratory problems caused by indoor smoke. Most of the victims are infants, children, and women from poor rural families.

Globally, 2 billion people rely on biomass fuels for energy. The regions with the highest level of biomass fuel use are Sub-Saharan Africa and South Asia. The data show very little progress between 1990 and 2004 for Africa and more generally for low-income countries, where the use of biomass products and waste as a percentage of total energy use has gone from 55 percent in 1990 to 48 percent in 2004.

Deforestation

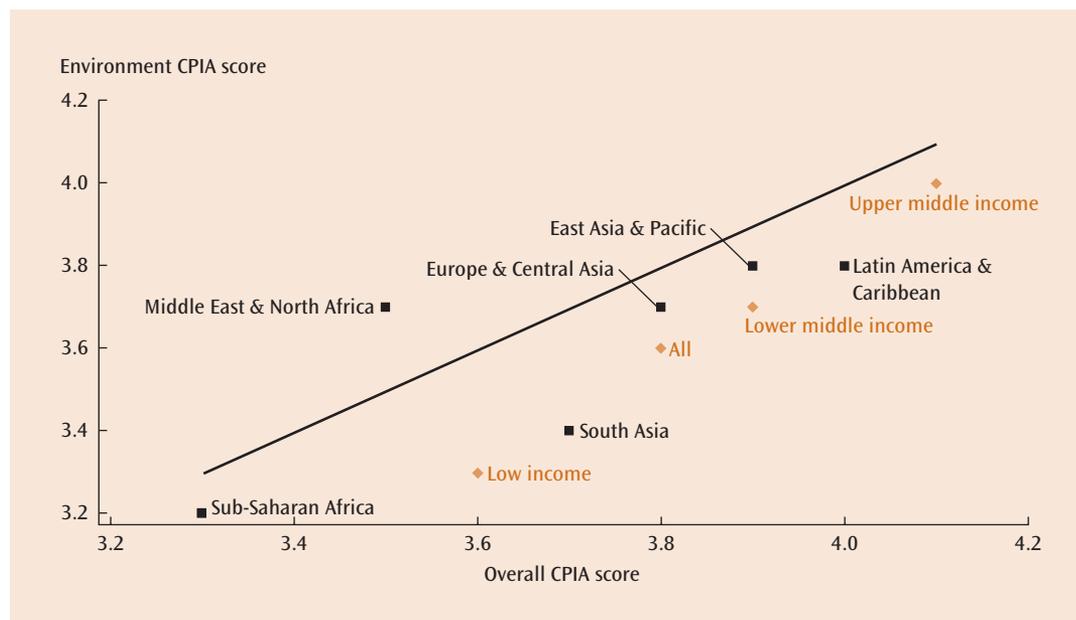
Forests provide important ecosystem services (CO₂ sequestration and regulation of water flows, for example) and host most of the world's biodiversity. The causes of deforestation and ecosystem loss include conversion to agriculture and unsustainable commercial timber extraction, particularly in the presence

of ill-defined property rights and corruption. Forests can be used wastefully if they are cleared for low-productivity ranches that are ultimately abandoned. The net change in forest area during 1990–2005 is estimated to be a loss of 8.3 million hectares a year (an area about the size of Panama or Sierra Leone). Deforestation is highest in Sub-Saharan Africa (0.6 percent per year between 1990 and 2005) and in Latin America and the Caribbean (0.4 percent per year). While fragile states contained 8.2 percent of the world's forest area in 2005, they also accounted for 28.6 percent of world deforestation.

Update on Country Programs and Policies

Sustainable development requires that actions by the current generation not damage the development prospects of future generations. This can be achieved by ensuring that wealth, broadly conceived to include human-made and natural assets, does not decline from one generation to the next. Sustainability presents a significant challenge, especially in the presence of public goods and externalities, because markets by themselves are not able to ensure efficient outcomes. In addition to market failures, policy failure is also a distinct possibility. The “resource curse” literature (see, for example, Auty and Gelb 2001) argues that natural resource wealth may dampen economic growth owing to the political economy of rent-seeking that occurs in many resource-rich countries, while the volatility of natural resource prices presents risks to macroeconomic stability.

Whether the problem is a market failure or a policy failure, sustainable development requires strong institutions that are able to pursue a coherent economic policy and the objective of raising social welfare. Population-weighted environment CPIA scores for regions and income groups for 2005 (figure 1.6) show that Sub-Saharan Africa scores lowest (3.2), while East Asia and Latin America have the highest regional average (3.8). The regional average scores mask good performance in

FIGURE 1.6 Environment and overall CPIA score by region and income group

Source: CPIA database.

Note: Scores are population weighted.

many countries—Mauritius and South Africa are strong performers in Sub-Saharan Africa, for example, while the Republic of Korea, Malaysia, Thailand, Costa Rica, and Mexico top the lists in East Asia and Latin America. As might be expected, there is a wide difference between the environment scores of low-income countries (3.3) and upper-middle-income countries (4.0). Figure 1.6 shows that environment CPIA scores are generally lower than overall CPIA scores, indicating that the quality of environmental institutions in developing countries is lagging in relative terms.

Looking Ahead

This brief update on MDG7 has necessarily neglected many issues that could be taken up in future GMRs. Potential issues for consideration include (1) climate change and development; (2) poverty-environment links, including evidence on the environmental contribution to the health and livelihoods of poor households; and (3) natural resources as assets for devel-

opment, emphasizing the key roles played by agricultural land, forest and fisheries in generating income, and natural areas as a resource for nature tourism.

Notes

1. In this report, low-income countries are those eligible for IDA assistance. Other developing countries are classified as middle income.

2. As box 1.1 indicates, fragility is defined according to cutoff values of the World Bank's country policy and institutional assessment (CPIA). In 2005 the list of countries and territories for which the CPIA rating (see World Development Indicators 2007) was at 3.0 and below includes Afghanistan, Angola, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Eritrea, Guinea, Guinea-Bissau, Haiti, Kosovo, Lao PDR, Liberia, Myanmar, Solomon Islands, Somalia, Sudan, Timor-Leste, Togo, Tonga, Uzbekistan, West Bank and Gaza, and Zimbabwe. Marginal fragile states, for which the CPIA rating is at 3.1 or 3.2 include Cambodia, Djibouti, The Gambia, Mauritania, Nigeria, Papua

New Guinea, São Tomé and Príncipe, Sierra Leone, and Vanuatu. As CPIA ratings change, countries move in and out of the list.

3. The low-income countries are Albania, Armenia, Bolivia, Burkina Faso, Côte d'Ivoire, Georgia, Honduras, India, Indonesia, Kyrgyz Republic, Lao PDR, Moldova, Mongolia, Mozambique, Nigeria, Tajikistan, Uzbekistan, Vietnam, Zambia. The middle-income countries are Argentina (urban), Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, El Salvador, Estonia, Guatemala, Jamaica, Jordan, Kazakhstan, Latvia, Lithuania, Macedonia, Mexico, Paraguay, Peru, Philippines, Poland, Romania, Russia, Thailand, Uruguay (urban), República Bolivariana de Venezuela.

4. Chauvet and Collier (2004) estimate that when a fragile state is a neighbor, the result is a loss of 1.6 percent of GDP per year.

5. Those who performed studies of the negative impact of conflict on GDP include Knight and others (1996); Collier (1999); and Caplan (2001). Collier (1999) also found that a negative impact persisted long after conflict.

6. Chauvet and Collier (2004) estimate that state fragility as measured by LICUS status typically reduces the annual growth rate of peacetime economies by 2.3 percent relative to other developing economies.

7. Not only are the questions underlying the macroeconomic assessments different in the CPIA, but the 2005 survey also omits four fragile states in the IMF staff assessments.

8. The 2006 GMR suggested that bureaucratic capability was best measured using the World Bank's CPIA measures of budget and financial management, and administrative quality. However, these measures are only available publicly for one year and for IDA recipients. The Kaufmann-Kraay (KK) government effectiveness indicator is closely correlated with these measures (the correlation coefficients for 2005 data with the CPIA Budget and Financial Management, and Administrative Quality measures are 0.71 and 0.81, respectively) and is used as an alternative.

9. The suggested checks-and-balances measure is a composite of three indicators: KK Voice and Accountability, KK Rule of Law, and Polity IV Executive Constraints. The Executive Constraints

variable for 2004 is used in the construction of the 2005 Quality of Checks and Balance Institutions dimension.

10. A two-step filtering process was used to identify significant governance improvements between 1996 and 2005. Under this process a country should experience (1) improvement in at least one of its Government Effectiveness, Voice and Accountability, and Rule of Law indicators at the 75 percent confidence level; and (2) an increase in its score on either the Government Effectiveness or Quality of Checks and Balance Institutions dimension by at least 0.15 points.

11. Each of the KK measures is a composite that combines distinct but related concepts. Thus KK Government Effectiveness measures "the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" (Kaufmann, Kraay, and Mastruzzi 2006).

12. A country is placed in Trajectory II if there is significant improvement along both dimensions according to the two filters, but the improvement in the Government Effectiveness dimension is two times or greater than the improvement in Checks and Balances. Similarly, if the improvement in the Checks and Balances dimension is two times or greater than the improvement in the Government Effectiveness dimension, the country is placed in Trajectory III.

13. "Adjusted net saving" modifies traditional gross savings measures to account for depreciation of produced capital, the depletion of natural resources, pollution damages, and investment in human capital. The lack of comparable international data on many natural resources such as fishery depletion, diamond resources, and extraction of subsoil water means that the adjusted savings figures published here and in the World Development Indicators will be incomplete for some countries. In addition, a portion of health expenditures should be viewed as investment in human capital and captured in the adjusted savings measure, but data are again a problem. The divergence between local and international prices may distort both gross and adjusted net savings figures, because some investments (in education, or nontradables such as buildings) are valued at local prices, while natural resources and machinery and equipment are valued at world prices.

ANNEX TABLE 1A.1 Share of people living on less than \$1.08 a day (%)

Region	1981	1990	1993	1996	1999	2002	2004	Forecast 2015
EAP	57.7	29.8	25.2	16.1	15.5	12.3	9.1	2.4
<i>China</i>	63.8	33.0	28.4	17.4	17.8	13.8	9.9	2.6
ECA	0.7	0.5	3.6	4.4	3.8	1.3	0.9	0.5
LAC	10.8	10.2	8.4	8.9	9.7	9.1	8.6	6.0
MNA	5.1	2.3	1.9	1.7	2.1	1.7	1.5	0.8
SAR	51.6	43.0	37.1	36.6	35.8	34.7	31.9	18.0
<i>India</i>	54.3	44.3	42.1	40.6	38.8	37.5	35.8	22.1
SSA	42.3	46.7	45.5	47.7	45.8	42.6	41.1	35.4
Total	40.6	28.7	25.6	22.8	22.3	20.4	18.4	11.8
<i>Fragile states</i>		49.0					54.2	50.4

ANNEX TABLE 1A.2 Share of people living on less than \$2.15 a day (%)

Region	1981	1990	1993	1996	1999	2002	2004	2015
EAP	84.8	69.7	65.0	52.5	49.3	41.7	36.6	15.3
<i>China</i>	88.1	72.2	68.1	53.3	50.1	40.9	34.9	14.1
ECA	4.6	4.3	16.5	18.0	18.6	12.9	9.8	4.7
LAC	28.4	26.2	24.1	25.2	25.3	24.8	22.2	17.3
MNA	29.2	21.7	21.4	21.4	23.6	21.1	19.7	10.9
SAR	89.1	85.7	82.4	82.4	80.8	80.3	77.7	60.1
<i>India</i>	89.6	86.4	85.5	84.5	83.2	82.1	81.1	66.8
SSA	74.5	77.1	76.1	76.4	75.8	73.8	72.0	64.7
Total	67.1	60.8	59.4	55.5	54.4	50.8	47.7	34.2
<i>Fragile states</i>		73.4					75.8	72.7

ANNEX TABLE 1A.3 Number of people living on less than \$1.08 a day (millions)

Region	1981	1990	1993	1996	1999	2002	2004	2015
EAP	796	476	420	279	277	227	169	48
<i>China</i>	634	374	334	211	223	177	128	37
ECA	3	2	17	21	18	6	4	2
LAC	39	45	39	43	49	48	47	38
MNA	9	5	5	4	6	5	4	3
SAR	473	479	440	459	475	485	462	304
<i>India</i>	382	376	379	385	387	393	386	283
SSA	168	240	252	286	296	296	298	326
Total	1489	1247	1172	1093	1120	1067	986	721
<i>Fragile states</i>		172					261	306

ANNEX TABLE 1A.4 Number of people living on less than \$2.15 a day (millions)

Region	1981	1990	1993	1996	1999	2002	2004	2015
EAP	1170	1113	1083	908	883	766	684	312
<i>China</i>	876	819	803	650	628	524	452	196
ECA	20	20	78	85	88	61	46	23
LAC	104	115	111	122	128	131	121	109
MNA	51	49	52	55	65	61	59	40
SAR	818	954	976	1035	1073	1124	1124	1015
<i>India</i>	630	734	769	801	832	861	876	853
SSA	296	396	422	458	491	513	522	597
Total	2457	2647	2722	2664	2727	2655	2556	2095
<i>Fragile states</i>		257					365	441

Source: World Bank staff estimates.

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