

Spreading and sustaining growth in Africa

Something decidedly new is on the horizon in Africa, something that began in the mid-1990s. Many African economies appear to have turned the corner and moved to a path of faster and steadier economic growth. Their performance over 1995–2005 reverses the collapses over 1975–85 and the stagnations over 1985–95. And for the first time in three decades, African economies are growing with the rest of the world. Average growth in the Sub-Saharan economies was 5.4 percent in 2005 and 2006. The consensus projection is 5.3 percent for 2007 and 5.4 percent for 2008. Leading the way: the oil and mineral exporters, thanks to high prices. But 18 non-mineral economies, with more than a third of the Sub-Saharan African people, have also been doing well.

Is this the outcome of good luck or good policy? Luck certainly has been a factor. Global economic growth has been fairly steady over the last 10 years—at 3.2 percent. Global trade has expanded at 40 percent a year. And foreign direct investment rocketed from 1.15 percent of world GDP in 1995 to more than 2.23 percent in 2005, with private equity funds scouring the globe for new opportunities. Emerging stock markets have also been burgeoning, thanks to global investors searching for high returns.

But policies in many Sub-Saharan countries have also been getting better. Inflation, budget deficits, exchange rates, and foreign debt payments are more manageable. Economies are more open to trade and private enterprise. Governance is also on the mend, with more democracies and more assaults on corruption. The conclusion: yes, some luck, but policy improvements have also made a difference.

Better economic policy and performance will be at the core of continuing to improve

Africans' well-being. About 41 percent of Sub-Saharan Africa's people live on less than \$1 a day. Because of AIDS, tuberculosis, malaria, and other diseases, improvements in life expectancy have stalled in some countries, retreated in a few others. And despite substantial progress in primary enrollments, educational outcomes are not improving as quickly as they might. Poor health and poor schooling naturally hold back improvements in people's productivity—and the chances of meeting the Millennium Development Goals. That is why it is so essential to spread economic growth to all of Africa and so essential to sustain it, by avoiding the collapses that have erased past gains.

This essay explores the patterns of growth in Sub-Saharan Africa over the past 30 years. It finds that the volatility of growth—a product of conflict, governance, and world commodity prices—has been greater than in any other region. That volatility has dampened expectations and investments—and has obscured some periods of good performance for some countries. The analysis here finds that pickups in growth were seldom sustained—indeed, that they were often followed by ferocious declines. Hence, Africa's flat economic performance over 1975–2005. Where an economy started in 1975 is pretty much where it ended in 2005. The reason: when things go well they do not last, and when they go wrong they go very wrong.

So, avoiding a decline from 2 percent GDP growth to –3 percent is as important as going from 2 percent to 7 percent. Indeed, it may be more important for poor people, who gain much less during growth pickups and suffer much more during the declines. The question for economic policymakers in Africa, then, is how best to sustain the pickups in growth. The answer: avoid the crushing declines.

Growing in tandem with the rest of the world

Since the mid-1990s average incomes in Africa have been rising in tandem with those in other regions. Despite an unanticipated oil shock, growth has remained good. Average growth in 2005 was 5.5 percent; it is estimated at 5.3 percent in 2006 and projected to be 5.3 percent in 2007. More than a third of Africans now live in countries that have grown at more than 4 percent a year for 10 years.

A group of diversified sustained growers has begun to emerge, and natural resources have gained new importance. In 2005 growth varied substantially, from -5.3 percent to 20.6 percent, and eight countries were near or above the 7 percent threshold needed to sustain poverty reduction. Along this continuum of growth performance three broad country types are emerging: slow-growth economies (36.7 percent of Africa's population), which include many conflict or post-conflict countries; diversified,

sustained-growth economies (35.6 percent of Africa's population), which have grown at more than 4 percent a year for at least 10 years; and oil exporters (27.7 percent of Africa's population) (table 1).

Most of the successful growing economies share some characteristics. They integrate more with the world economy through trade, especially exports. Their investment and productivity are on the rise. And their institutions are getting better. What do recent data reveal about these aspects of growth in Africa (figures 1–9)?

Investment and efficiency

Africa's growth deficit is the product of low productivity and low investment. Growth accounting shows that physical capital per worker has grown less than 0.5 percent a year, half the world average. Capital shrank between 1990 and 2003, mirroring low capital investment. But the contribution of human capital to growth has kept pace with the rest of the world, mainly a result of rising average years of schooling. Indeed, the main culprit in Africa's disappointing growth is total factor productivity, negative since the 1960s and -0.4 percent between 1990 and 2003 (Bosworth and Collins 2003).

New evidence indicates improvement in these areas. Some improvements in the growth of output per worker in Africa were registered in recent years, and the contribution of total factor productivity dominated this recovery (Berthelemy and Soderling 2001).

Overall, investment increased between 2000 and 2006, from 16.8 percent of GDP to 19.5 percent. Sustained-growth countries have aggregate efficiency on par with India's and Vietnam's, and they are approaching these countries in investment. For the slow growers, by contrast, efficiency and investment were lower.

The aggregate productivity numbers are supported by firm studies (Eifert, Gelb, and Ramachandran 2005). Recent research shows that efficient African enterprises can compete with Chinese and Indian firms in factory floor costs (figure 10). They become less competitive, though, due to higher indirect business costs, including infrastructure (figures 11 and 12). In China indirect costs are about 8 percent of total costs, but in African countries they are 18–35 percent.

Table 1 African GDP growth rates, by country type, 1996–2005

Slow-growth economies GDP growth less than 4 percent a year (36.7 percent of population)		Diversified, sustained-growth economies GDP growth 4 percent a year or more (35.6 percent of population)		Oil exporters (27.7 percent of population)	
Country	GDP growth (percent)	Country	GDP growth (percent)	Country	GDP growth (percent)
Zambia	3.80	Mozambique	8.3	Equatorial Guinea	30.8
Guinea	3.70	Rwanda	7.6	Chad	9.0
Niger	3.50	São Tomé and Príncipe	7.1	Angola	8.5
Malawi	3.30	Botswana	6.7	Sudan	6.3
Mauritania	3.30	Uganda	6.1	Nigeria	4.3
Togo	3.30	Cape Verde	5.8	Congo, Rep.	3.4
Madagascar	3.20	Mali	5.8	Gabon	1.1
Lesotho	3.00	Tanzania	5.3		
Kenya	2.90	Ethiopia	5.2		
Eritrea	2.41	Sierra Leone	5.2		
Seychelles	2.30	Burkina Faso	5.0		
Comoros	2.13	Mauritius	4.8		
Central African Republic	0.85	Ghana	4.7		
Guinea-Bissau	0.47	Benin	4.6		
Burundi	0.43	Senegal	4.5		
Congo, Dem. Rep.	0.08	Cameroon	4.2		
Zimbabwe	-2.20	Gambia, The	4.2		
		Namibia	4.0		

Note: GDP growth rates are compound annual averages.
Source: World Bank Development Data Platform.

Trade

African exports have been growing over the last few years, most dramatically for the oil exporters, but for the non-oil-producers as well (table 2). Exports rose from \$182 billion in 2004 to \$230 billion in 2005, and 38 countries increased their exports, with pockets of nontraditional exports (such as clothing from Lesotho, Madagascar, and Mauritius). Rwanda, by helping farmers connect to buyers of high-quality coffee, boosted its coffee exports to the United States by 166 percent in 2005—driving its impressive growth. In Ghana thousands of employees process U.S. health insurance claims around the clock, and many customers in France do not realize that they are dealing with call centers in Senegal. In Kenya exports of cut flowers more than doubled between 2000 and 2005 to rank second among its exports, after tea. While these trends are encouraging, growth rates for non-oil-exporters are not yet high enough to constitute an export push.

Policies and governance

A central lesson of Africa's growth experience is that "policy and governance matter a great deal" (Ndulu and others 2007, p. 42). Africa today enjoys better growth prospects because its leaders have undertaken major reforms over the past 10 years. In 2006 Africa's best Country Policy and Institutional Assessment (CPIA) ratings were in macroeconomic management and trade policy. Over 1999–2006 average scores from the CPIA rose year on year, and the number of African countries with scores at or above the international "good performance" threshold of 3.5 on a scale of 1 to 6 increased from 5 to 15. The average African CPIA score in 1995 was 2.80. By 2006 it had risen to 3.2, and 27 of 36 countries evaluated in both years had improved their scores.¹

Recent data from *Global Monitoring Report 2007* (World Bank 2007b) provide some evidence of better governance. Measures of bureaucratic capabilities and the quality of checks and balances institutions improved in six African countries (The Gambia, Ghana, Kenya, Madagascar, Senegal, and Tanzania). And three of the seven countries worldwide showing improved governance in a balanced manner over the last decade were in Africa. However, four countries suffered

large declines in governance indicators (Central African Republic, Côte d'Ivoire, Eritrea, and Zimbabwe). In mid-2007 there were still 5 civil wars, much fewer than the 16 that existed in the late 1990s.

Doing more business

In the 2006/07 Doing Business indicators, the average rank of African countries was 136 among 178 countries (table 3). Four countries had ranks in the top third—Mauritius 32, South Africa 35, Namibia 43, and Botswana 51. Kenya rose to 72, and Ghana to 87. But all the others had ranks of 90 or higher.

Before 2005 African countries were slow to reform, but the pace has picked up in the last two years. Presidential investors' councils or similar bodies are active in seven countries, among them Mozambique, Rwanda, and Tanzania. Benchmarking through the World Bank's Doing Business surveys and Investment Climate Assessments has proven very useful in focusing high-level attention on the business environment.

Forty-six Sub-Saharan countries introduced at least one business environment reform in the past year, and Ghana and Kenya were among the top 10 reformers in the world in 2006/07. Eleven African countries introduced reforms to reduce the time and cost needed to start a business. For example,

Table 2 African export growth rates, by country type, 2003–06 (percent)

Country group	2003	2004	2005	2006
All countries	8.2	12.9	14.1	11.3
Oil exporters	16.7	21.6	19.2	13.5
Non-oil-producers	4.5	7.6	5.7	7.1

Source: International Monetary Fund data.

Table 3 Average ease of doing business rank, by region, 2006/07

Region	2006
East Asia & Pacific	76
Europe & Central Asia	77
Latin America & the Caribbean	87
Middle East & North Africa	96
South Asia	107
Sub-Saharan Africa	136

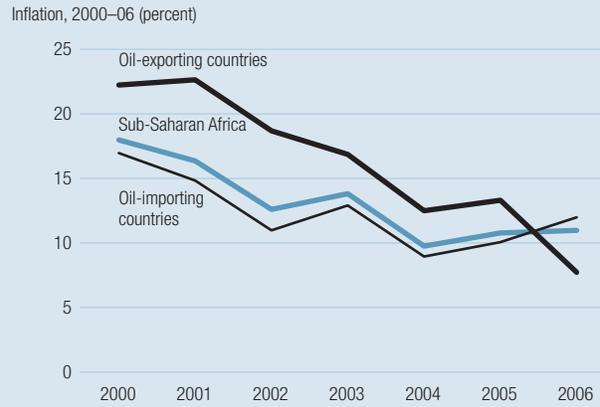
Note: A lower rank is better.
Source: World Bank 2007a.

Figure 1 African per capita income is now increasing in tandem with other developing countries



Source: World Bank Development Data Platform.

Figure 2 Macroeconomic management has improved



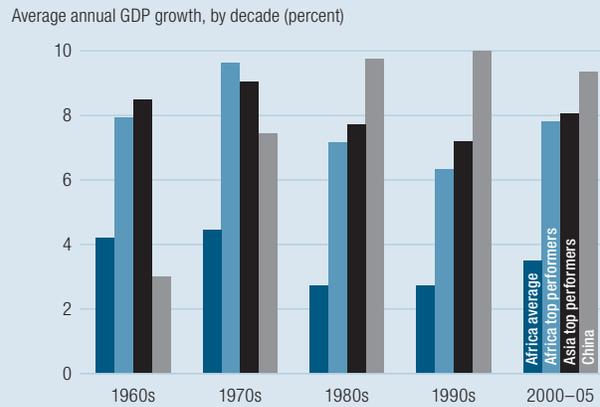
Source: International Monetary Fund Sub-Saharan Africa Regional Economic Outlook.

Figure 3 Structural policies have improved in Sub-Saharan Africa



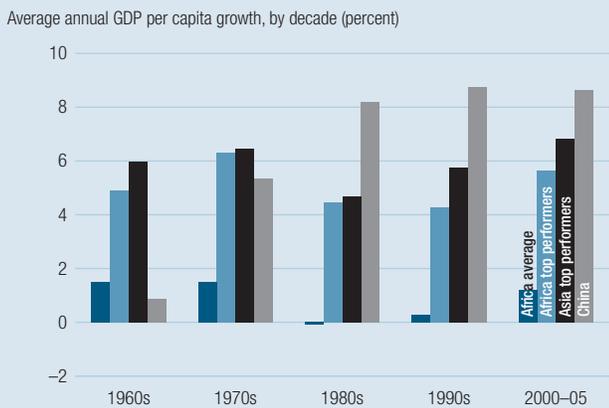
Source: World Bank 2006.

Figure 4 Africa's five fastest growing economies stack up well with Asia . . .



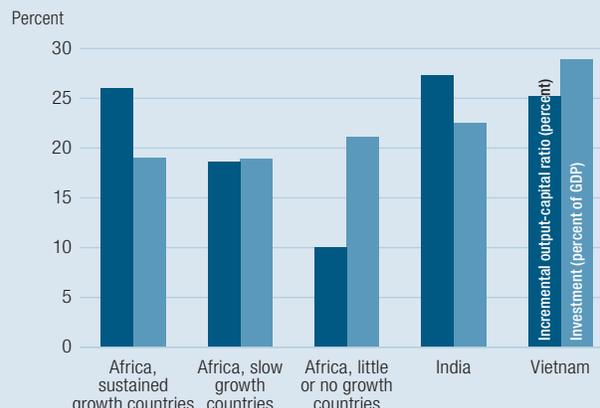
Source: World Bank Development Data Platform.

Figure 5 . . . but high population growth takes its toll on per capita income



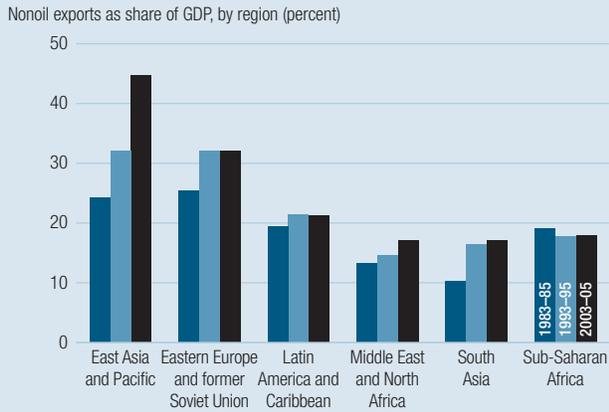
Source: World Bank Development Data Platform.

Figure 6 Africa's best performers are on a par with India and Vietnam



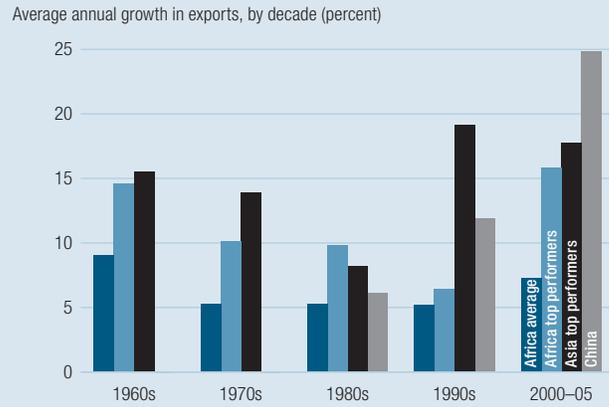
Source: World Bank Development Data Platform.

Figure 7 Exports are important . . .



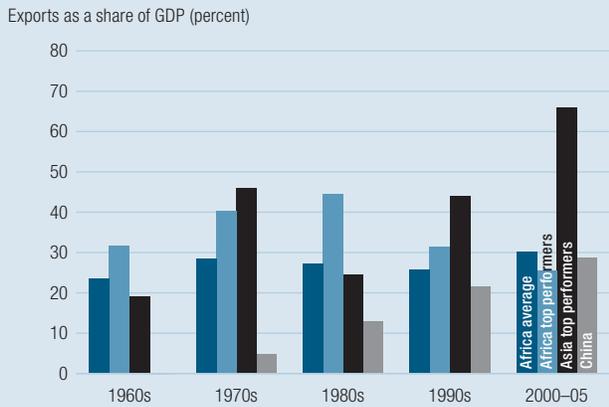
Note: Export shares are unweighted averages.
Source: International Monetary Fund World Economic Outlook database.

Figure 8 . . . but are growing slowly . . .



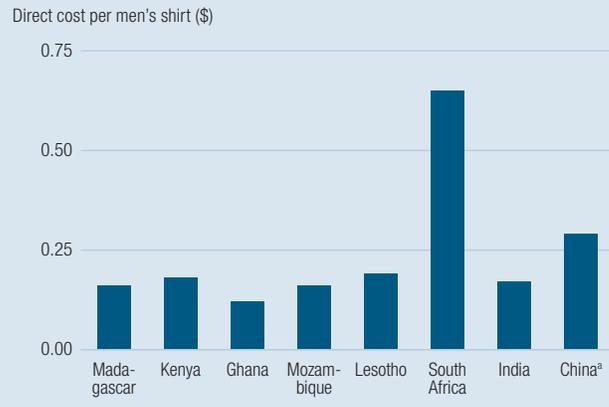
Source: World Bank Development Data Platform.

Figure 9 . . . and are declining in importance for Africa's top performers



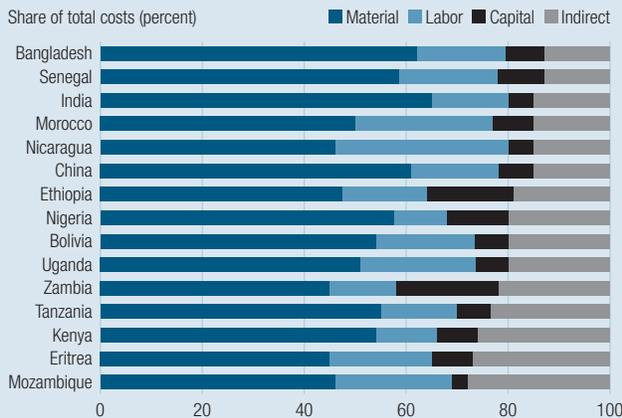
Source: World Bank Development Data Platform.

Figure 10 Factory floor costs in Sub-Saharan Africa compare well with those in China and India



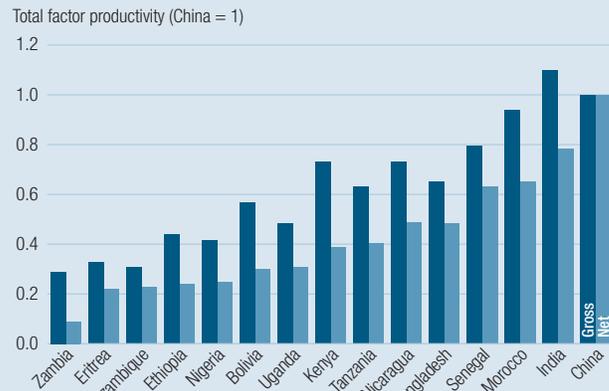
a. For factories in an export processing zone.
Source: World Bank Development Data Platform.

Figure 11 The overall cost structures of firms show that indirect costs are much higher in Africa



Source: Eifert, Gelb, and Ramachandran 2005.

Figure 12 And net productivity is much lower than "factory floor" (gross) productivity due to high costs of doing business



Source: Eifert, Gelb, and Ramachandran 2005.

Burkina Faso created a one-stop shop for business entry, cutting required procedures from 12 to 8 and time from 45 days to 34.

Although financial depth remains low in Africa, signs of recovery are encouraging. Real private sector credit as a share of GDP in low-income African countries has turned the corner, reaching almost 13 percent in 2005, about a third higher than its low point in 1996.

Africa's success in restoring growth is beginning, however, to reveal some emerging constraints to future growth. Infrastructure across the continent is under stress. Skills to build and sustain competitive enterprises are lacking. And the many small and land-locked economies face unique challenges that can be addressed only through effective regional integration. African agriculture—long neglected—may also emerge as a constraint to growth in some economies and as the sector for sharing the benefits of growth broadly in others.

Closing the infrastructure gap

Sub-Saharan Africa lags at least 20 percentage points behind the average for International

Development Association countries on almost all major infrastructure measures.² In addition, the quality of service is low, supplies are unreliable, and disruptions are frequent and unpredictable—all pushing up production costs, a critical impediment for investors (table 4). There are also large inequities in access to household infrastructure services, with coverage rates in rural areas lagging behind those in urban areas. The region's unmet infrastructure needs are estimated at \$22 billion a year (5 percent of GDP), plus another \$17 billion for operations and maintenance.

Recent progress is encouraging. Except roads, indicators of infrastructure access rose between the 1990s and the 2000s (table 5). The Africa Partnership Forum reported steady improvements in effectively using existing infrastructure and in increasing public investments. Countries are also undertaking regulatory and policy reforms, especially in water, telecommunications, and transport (Africa Partnership Forum 2006b). Twenty of the largest African countries have or are formulating reform agendas for water and sanitation.

Compared with other regions, Africa has been slow to mobilize the private sector for the provision and financing of infrastructure. The Infrastructure Consortium reports that private sector interest has gradually spread. There is an upward trend in private sector provision and management of infrastructure, which stood at \$6 billion in 2006, up from \$4 billion in 2004. Most private flows (84 percent) go to telecommunications and energy. Concessions have now been awarded to operate and rehabilitate many African ports and railways and some power distribution enterprises, but financial commitments by the concessionaire companies are often small. This reflects both the value of the management improvements that the concessionaire is expected to bring and the limited scale and profitability of the enterprises taken over. An important facilitator in some cases has been the insurance instruments developed over the past 15 years by such bodies as the U.S. Overseas Private Investment Corporation and the Multilateral Investment Guarantee Agency and by the World Bank's Partial Risk Guarantee offerings.

Table 4 Impact of unreliable infrastructure services on the productive sector

Service problem	Sub-Saharan Africa	Developing countries
<i>Electricity</i>		
Delay in obtaining electricity connection (days)	79.9	27.5
Electrical outages (days per year)	90.9	28.7
Value of lost output due to electrical outages (percent of turnover)	6.1	4.4
Firms maintaining own generation equipment (percent of total)	47.5	31.8
<i>Telecommunications</i>		
Delay in obtaining telephone line (days)	96.6	43.0
Telephone outages (days per year)	28.1	9.1

Note: Data for Sub-Saharan Africa are for 6 countries; data for developing countries are for 55 countries.
Source: World Bank Investment Climate Assessments.

Table 5 Improvements in African infrastructure access

Service	1990s	2000s	Percent change
Telephones (per 1,000 people)	21	90	328.6
Improved water (percent of households)	55	65	18.1
Improved sanitation (percent of households)	31	37	19.3
Grid electricity (percent of households)	16	23	43.8

Source: World Bank 2006.

There has been significant progress in information and communication technology. Access to communications services has increased dramatically over the past three years, with the proportion of the population (excluding South Africa) living under the mobile telephone footprint rising from 3 percent in 1999 to 50 percent in 2006. This has been matched by an equally rapid increase in the use of communications services. By the end of 2006 there were 123 million mobile subscribers. Average penetration rates in the region doubled between 2004 and 2006 to reach 16 percent.

Building skills for competitiveness and growth

The enrollment trends in secondary and tertiary education are positive, though completion rates and quality remain low. The secondary gross enrollment rate rose from a regional average of 24 percent in 1999 to 31 percent in 2004. Still, only 30 percent of each age cohort completes junior secondary school and 12 percent senior secondary. There is also considerable variation. Botswana, Cape Verde, Mauritius, Namibia, Seychelles, and South Africa enroll more than 80 percent of the relevant population in junior secondary schools, while Burundi, Burkina Faso, Central African Republic, Niger, and Rwanda enroll less than 20 percent. Access to tertiary education has been increasing at 15 percent a year across the region, but coverage remains the lowest in the world, less than 5 percent of the relevant age population. Gender parity in secondary education is improving, with women making up more than 40 percent of enrollments in most countries (up from 20–30 percent 10 years ago).

Over the past two years African policymakers and development partners have placed greater emphasis on postprimary education and primary school completion. National policies are being reoriented toward better tertiary education in Botswana, The Gambia, Kenya, Nigeria, Rwanda, Tanzania, and Uganda. Private secondary education and training are expanding, and public-private partnerships are emerging. Previously neglected issues—such as labor market links among curricula, science and technology capacities, and research performance—are emerging in public discussions. And private options are increasing.

Integrating the region's economies

The small size of African economies and the fact that many countries are landlocked call for regional approaches to common problems: infrastructure in trade corridors, common institutional and legal frameworks (customs administration, competition policy, regulation of common property resources such as fisheries), and transborder solutions to regional health issues.

African leaders are more aware of the benefits of regional approaches, especially in matters related to trade and infrastructure. The New Partnership for Africa's Development has adopted regional integration as one of its core objectives, and the African Union is leading efforts to rationalize regional economic communities. Most countries in Africa are party to multiple treaties or conventions addressing joint development and management of shared water resources (including navigation and fisheries), hydropower, trade corridors, irrigation, and flood control. Progress has been most notable in regional infrastructure, particularly regional power pools (in West and Southern Africa) and in launching customs unions (West, East, and Southern Africa). Progress on regional infrastructure is slowed by the technical complexity of multicountry projects and the time required for decisions by multiple governments. There is less progress in regional approaches to education and in systematically addressing regional health issues.

Making agriculture more productive

Sustained growth that reduces rural poverty will require that more countries achieve 5 percent annual growth in agricultural value added. While growth in agricultural value added has been strong since 2000, averaging 4.6 percent in 2004, too little of it has come from higher productivity or yields.³ While land productivity is increasing in 38 of 46 countries, only 6 have a rate of increase of 5 percent or more.⁴ Labor productivity is increasing in 29 countries, with 10 achieving increases of 3 percent a year or higher.⁵

Productivity growth will require an expansion of area irrigated, as well as better performance of rainfed agriculture. But less than 4 percent of cultivated land is irrigated. Because of the long lead time before

investments are completed and operational, this proportion changed little in the past 18 months. Improvements in management of soil fertility have been slow, as has the adoption of better seeds. Spending for agricultural research and technology remains low, although it is starting to increase along with overall spending on agricultural programs in the region (Africa Partnership Forum 2006a). On a positive note there has been an increase in the use of water management techniques (water harvesting, reduced tillage).

Why growth is so important: meeting the Millennium Development Goals to reduce poverty and improve social outcomes

Human development outcomes are improving across the region, and progress toward the Millennium Development Goals is picking up. In 1990, 47 percent of Africans lived in poverty. In 2004, 41 percent did, and on present trends 37 percent will in 2015. Gross primary school enrollment rates rose from 79 percent in 1999 to 92 percent in 2004. Health outcomes are more varied but are also improving in many countries. In 2005 eight countries were near or above the 7 percent threshold needed to sustain poverty reduction.

Good economic growth and sustained efforts by governments and their development partners have accelerated progress on the Millennium Development Goals. Although Sub-Saharan Africa is one of two regions not expected to reach most of the Millennium Development Goals by 2015 (the other is South Asia), there is substantial variation among countries in both the level of attainment of the goals and the pace of progress. Mauritius has met four goals. Botswana has met three and will likely meet one more. And South Africa has met three. Among other countries nine will meet two goals, and 13 will meet at least one. But despite better progress—especially in education, malaria, and HIV/AIDS—23 African countries are not likely to meet any of the Millennium Development Goals.

Education

Between 1990 and 2004 the average literacy rate (in the 29 countries for which data are available) rose from 54 percent to 62 percent,

while the range improved from 11–81 percent to 26–87 percent. This convergence is the result of rising primary school enrollments. Regionwide gross enrollment rose from 79 percent in 1999 to 92 percent in 2004. Some 87 percent of Africans live in countries where the average enrollment rate is above 75 percent, and fewer than 2 percent live in countries where the rate is below 50 percent. Six of the seven top countries worldwide in boosting primary completion rates (by more than 10 percent a year between 2000 and 2005) are in Africa (Benin, Guinea, Madagascar, Mozambique, Niger, and Rwanda). There have not been comparable improvements in secondary and tertiary education. While East Asian countries increased secondary enrollment rates by 21 percentage points and tertiary enrollment rates by 12 percentage points over 12 years, Africa raised its secondary rates by only 7 percentage points and its tertiary rates by 1 percentage point.

Health

Between 1990 and 2005 life expectancy at birth in Sub-Saharan Africa declined from 49.2 years to 47.1. Although life expectancy increased in 25 countries by an average of eight years, it declined in 21 more populous countries by an average of four years. HIV/AIDS, malaria, and armed conflict have contributed to these falling life expectancies. Progress against malaria, tuberculosis, and HIV/AIDS is mixed but showing some positive signs. The spread of AIDS has slowed in Africa, but the continent still bears the brunt of the epidemic. Rapid increases in tuberculosis infections in Africa are linked to the greater likelihood of tuberculosis appearing from latent infections among HIV carriers. Malaria remains Africa's leading killer of children under age 5, but a strong new global partnership has formed to address the disease.

There is evidence that outcomes are improving for some of the other health Millennium Development Goals. Progress in addressing child mortality has been slow worldwide, but there are promising signs in Africa. The share of children ages 12–23 months immunized against measles went from 57 percent in 1990 to 64 percent in 2005. Some 70 percent of Africans now live in countries where under-five mortality has

dropped to 100–200 per 1,000 live births, while only 16 percent live in countries with rates above 200. Eritrea, despite a per capita income of only \$190, cut child mortality in half between 1990 and 2005. Substantial work is still needed for countries to meet the Millennium Development Goal of reducing the rate by two-thirds by 2015.

Can growth be spread and sustained?

Yes, if the past is not prologue

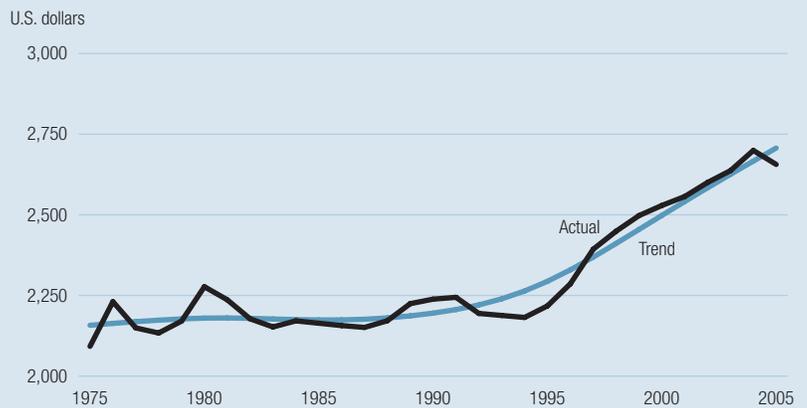
Africa today is thus very different from the Africa of the early 1990s, when it was coming out of the declines after the first two oil price shocks and the stagnation of the adjustment years. Whether it can stay different will depend on whether it can spread and sustain growth. To find out what that might take, this section looks at the patterns of long-term growth in Sub-Saharan Africa, using the most recent purchasing power parity data for 45 countries (Arbache and Page 2007a).

Country patterns

Sub-Saharan GDP per capita increased only modestly between 1975 and 2005 (figure 13). The average GDP per capita of most countries in 2005 closely mirrors that in 1975, reflecting inertia, stratification, and initial conditions in economic output (figure 14). Countries that started poor, stayed poor, and those that started richer, stayed richer—with few exceptions. Botswana and Namibia saw their GDP per capita shoot up, and Eritrea and Mozambique saw theirs tumble. Accompanying Africa’s slow growth is considerable instability in countries. The GDP per capita of countries varied wildly, as did the volatility of growth (figure 15). Volatility hit countries at different incomes (Botswana and Malawi) and on different long-term paths (Cape Verde, Comoros, and South Africa).

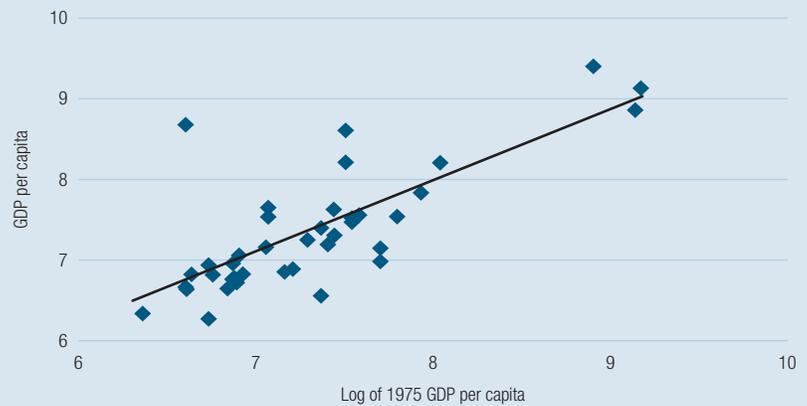
With poorer countries growing more slowly, the gap between their incomes and those of richer countries widened. The richest 10 percent of countries had 10.5 times the GDP per capita of the poorest 10 percent in 1975 and 18.5 times that in 2005. So even with country growth rates now converging, Africa has become more unequal across countries. The polarization of richer and poorer countries appears to

Figure 13 PPP GDP per capita, unweighted



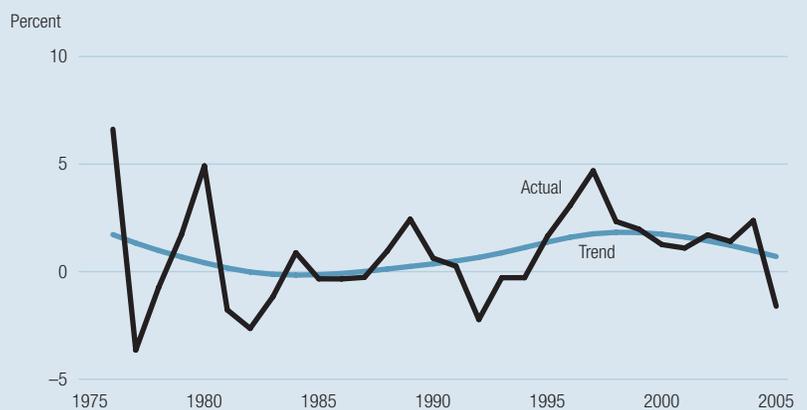
Source: Arbache and Page 2007a.

Figure 14 Average GDP per capita as a function of 1975 GDP per capita



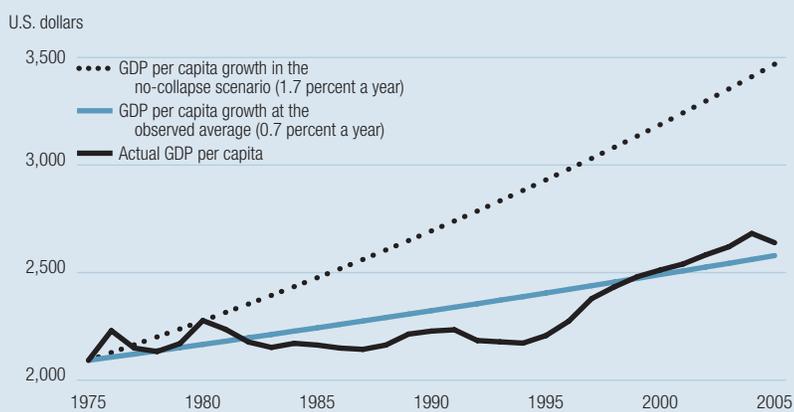
Source: Arbache and Page 2007a.

Figure 15 PPP GDP per capita growth



Source: Arbache and Page 2007a.

Figure 16 Actual and simulated GDP per capita



Source: Arbache and Page 2007b.

have increased over 1985–95, when many countries plunged into conflict. Emerging as regional stars are Botswana, Cape Verde, Gabon, Mauritius, Namibia, Seychelles, and South Africa, with 9 percent of the region’s people but 45 percent of its GDP.

How did countries fare in income per capita relative to South Africa, the region’s largest economy (now 38 percent of the region’s total GDP)? Nineteen improved, 13 stayed put, and 11 saw steep declines. The mineral exporters Botswana, Cape Verde, and Equatorial Guinea registered among the strongest improvements. But Angola, Chad, and Nigeria stayed put, showing that mineral resources do not always determine success.

This all suggests that African countries experience similar economic cycles, in an environment of interdependence, contagion, and other regional spillovers. Among the channels for the cross-country similarities in GDP per capita and productivity are worker remittances, temporary migration, and regional conflicts. Consider Chad and Sudan, Liberia and Sierra Leone, and the Democratic Republic of Congo and its neighbors.

Volatility matters little for growth

Slow output growth and high volatility are the defining characteristics of the long-run pattern of Sub-Saharan growth just described. But does high volatility mean slow growth? Not necessarily—or not directly.

Recent work finds a negative but not statistically significant relationship between

volatility and growth and between volatility and GDP per capita. That could be because policy and structural characteristics were not properly taken into account. It could also be that African economies are so stuck in their long-run ruts that short-term volatility cannot divert them. Or it could be that volatility and poor growth performance are both symptoms of institutionally weak societies and so are not independent (Acemoglu, Johnson, and Robinson 2003). In this view, policies are tools for the groups in power to reap rents and stay in power, adding to the difficulty of dealing with political and economic shocks, leading to more political and economic instability.

Because long-run growth in Africa was both low and volatile, it is a challenge to identify periods of sustained growth or decline. In 1975–85 Africa suffered two oil shocks, a plunge in commodity prices, and the eruption of conflict. In 1985–95 it introduced structural reforms that brought austerity to many countries. In 1995–2005 it began to recover. But the economic trajectories for individual countries were far from linear. The volatility of growth, just discussed, bears little relation to the long-run performance of an economy.

Though volatility itself may matter little for the overall rate of economic growth—and per capita income—for a typical African country, it may nevertheless indicate that growth spurts are offset by growth collapses. Some of these growth accelerations and decelerations may be due to pure bad luck: commodity prices rise and then fall. But others may be due to policy choices by governments. Looking at the underlying characteristics of growth accelerations and decelerations might thus provide some insights into how to sustain the spurts and avoid the collapses (Arbache and Page 2007b).

Sustaining the good times and avoiding the bad are what matter

The accelerations and decelerations on a country’s economic path—the good times and the bad—show that African countries experienced several episodes of growth over 1975–2005. But they have also saw a comparable number of collapses, offsetting most of the growth. If Africa could have avoided the collapses, it would have grown at 1.7 percent

a year per capita, not 0.7 percent. A percentage point might seem small, but it would have added 30 percent to the region's GDP (figure 16). So avoiding the collapses is a major economic challenge in Africa.

What constitutes good times for a given country? Four conditions. First, the four-year forward moving average of GDP per capita growth minus the country's four-year backward moving average is greater than zero for a given year. Second, the four-year forward moving average of growth is above the country's long-run trend. Third, the four-year forward moving average of GDP per capita exceeds the four-year backward average. Fourth, the first three conditions are satisfied for at least three years in a row followed by the three subsequent years after the last year that satisfies the first three conditions. And what constitutes the bad? The opposites of the first three conditions for the good.

Consider Tanzania. The first condition was met for the high growth years 1995–2005 (figure 17). But all four conditions were met for 1998–2005, which thus qualify as good times. The years just before that were a recovery from recession.

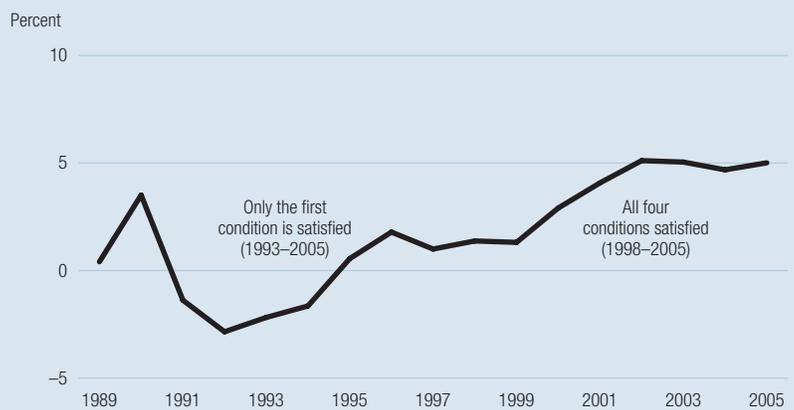
Now consider Senegal. It contracted during the bad times of 1998–2004, when the average rate of decline was –1.4 percent, well below the trend of 0.35 percent (figure 18). Then it grew at 1.75 percent during the good times of 1994–2001, not great but more than three points better than before.

And now South Africa. It contracted at –1.9 percent during 1982–87 and at –1.5 percent during 1989–94, below the trend of 0.1 percent (figure 19). Then during the good times of 1999–2005 GDP per capita growth rebounded to 2 percent.

Africa the region grew by 3.6 percent a year during good times and shrank by –2.7 percent during the bad. Most of the good times were in 1995–2005, and most of the bad in the preceding two decades. In 1975–85 the bad times were 3.5 times more frequent than the good, and in 1985–95, 0.7 times more frequent.

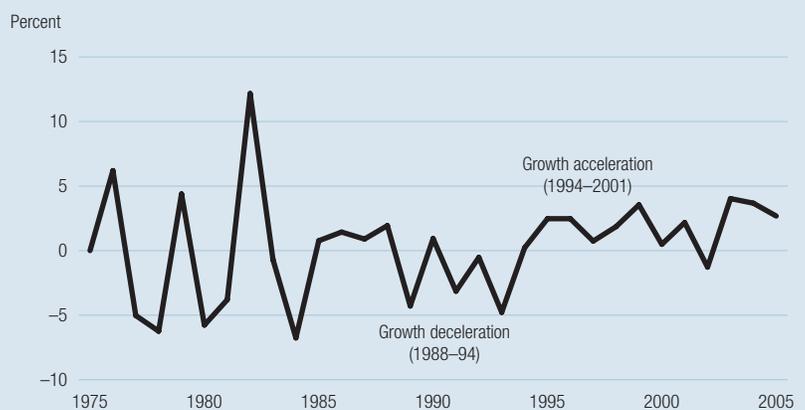
For many countries there is no substantial difference in the unconditional probability of good times or bad, canceling the benefits of growth (table 6). But for oil exporters and resource-rich countries, the good and bad times are well above the mean,

Figure 17 Tanzania GDP per capita growth



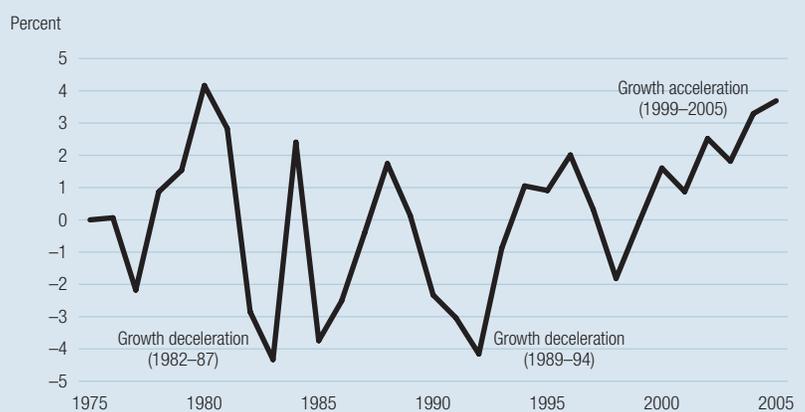
Source: Arbache and Page 2007b.

Figure 18 Senegal GDP per capita growth



Source: Arbache and Page 2007b.

Figure 19 South Africa GDP per capita growth



Source: Arbache and Page 2007b.

and for conflict countries the probability of bad times is substantially higher than that of good.

What happens in good times and bad—and in normal times, neither good nor bad?

Countries see numerous differences between normal times and good and bad times (table 7):

- Saving and investment (and especially foreign direct investment) are higher in good times than in normal times—and much lower in bad times. And countries with higher savings and investment have more good times and fewer bad times. So, growth swings seem associated with changes in economic fundamentals.
- Domestic consumption is lower in good times than in normal times, probably because more resources are going to investment. But it is also lower in bad times, probably because households have less purchasing power.
- The share of agriculture in the economy is higher in bad times, as people return to the land. The share of industry is somewhat larger in good times.
- Countries that rely less on agriculture have more good times, probably because they are more

diversified and less exposed to insects, drought, other natural disasters, and swings in the prices for agricultural products.

- Inflation is higher in bad times.
- Trade is substantially lower in bad times, with imports dropping sharply.
- The real effective exchange rate is more competitive in good times, but substantially less in bad. It depreciates in the good, appreciates in the bad.
- Official development assistance per capita is higher in good times, far lower in bad, as is official development assistance as a percentage of GDP. So, official development assistance is procyclical, reinforcing the importance of predictable aid for sustained growth.
- Life expectancy is lower in bad times.
- Infant mortality and child mortality are significantly higher in bad times (box 1).
- Primary school completion rates are significantly lower in bad times.
- The Country Policy and Institutional Assessment score drops in bad times, and countries with lower scores tend to experience more bad times. Countries that have more good times also have more voice and accountability. All governance indicators get worse during bad times. There is thus a close relationship between governance and growth, but it is far more relevant for understanding the bad times than the good.

Table 6 Frequency of growth acceleration and deceleration, by country category, 1975–2005

Country category	Growth acceleration		Growth deceleration	
	Frequency (country-years)	Above or below all countries mean	Frequency (country-years)	Above or below all countries mean
All countries mean	0.25		0.22	
Coastal	0.26	Above	0.22	Equal
Landlocked	0.23	Below	0.22	Equal
Coastal without resources	0.24	Below	0.23	Above
Landlocked without resources	0.22	Below	0.22	Equal
Oil exporters	0.29	Above	0.23	Above
Non-oil exporters	0.24	Below	0.22	Equal
Resource countries	0.30	Above	0.21	Below
Nonresource countries	0.23	Below	0.23	Above
Major conflict	0.16	Below	0.17	Below
Minor conflict	0.19	Below	0.32	Above

Source: Arbache and Page 2007b.

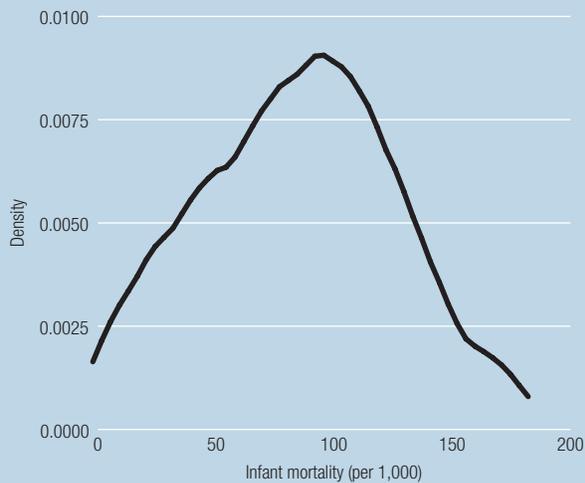
Country differences

Countries with a high probability of good times tend to have faster growth and a lower probability of bad times—while countries with a high probability of bad times tend to have slow growth. This may sound obvious, but the wide gap between growth rates during good times and bad times is most important. True, volatility is at play, but the gap also suggests that countries have the capability and resilience to grow when internal and external economic conditions and institutions favor them. The gaps tend to be wide for countries

During normal times the average infant mortality rate across Sub-Saharan Africa is 86.2 per 1,000. During good times, the ratio falls slightly to 84.2, which is not statistically different. But there is a major increase of infant mortality to 114.1 during the bad times. This evidence is illustrated by the kernel density distribution. During normal or accelerating times the kernel is right skewed (figures 1 and 2). But during decelerating times the kernel curve is clearly skewed to the left, and a second peak emerges, representing the countries experiencing much worse infant mortality levels (figure 3).

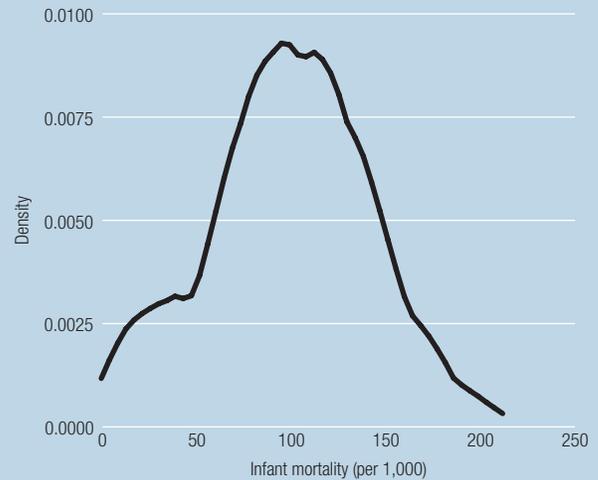
Among the countries in the second peak are Malawi and Mali in 1980, both of whose infant mortality rate was 176. Remarkably, as growth accelerated these countries experienced substantially lower figures: 115 in 1995 for Malawi and 124 in 2000 for Mali. Other countries in the second peak include Angola in 1990 and 1995, Niger in 1985 and 1990, and Sierra Leone in 1985, 1990, and 1995. These examples highlight the asymmetric relationship between growth acceleration and deceleration and social indicators, suggesting that growth volatility does matter and is marginally more important for the poor than growth acceleration.

Figure 2 Infant mortality (kernel density estimation) during growth acceleration



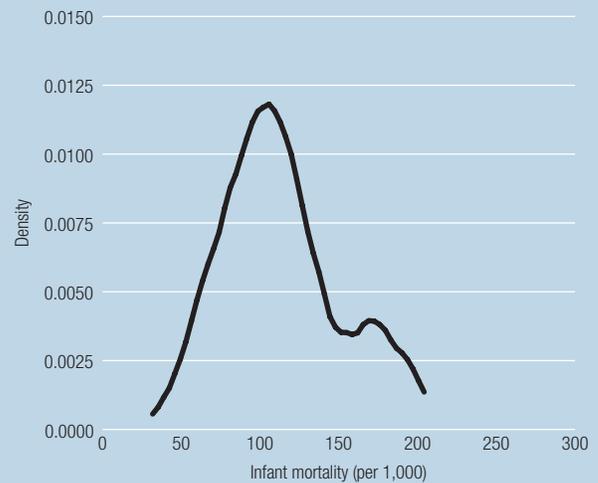
Source: Arbache and Page (2007b).

Figure 1 Infant mortality (kernel density estimation) during normal times



Source: Arbache and Page (2007b).

Figure 3 Infant mortality (kernel density estimation) during growth deceleration



Source: Arbache and Page (2007b).

in conflict and for countries rich in resources and thus exposed to commodity price volatility. But they are also wide for landlocked, resource-poor countries (such as Ethiopia and Mali).

What appears to increase the odds for good times? Higher savings. More foreign direct investment. A more competitive exchange rate. And what might reduce those odds? Higher government spending and major conflicts.

What appears to increase the odds for bad times? Inflation and minor conflicts. And what might reduce those odds? Higher savings, more domestic investment, more foreign investment, and more trade.

So, policies to sustain the good times and hold the bad at bay should increase savings, investment, and trade; attract foreign investment; and reduce conflict. Contributing to this are a friendlier business environment, stronger institutions, and better

Table 7 Difference between sample averages, 1975–2005

Variable	Normal times	Growth acceleration		Growth deceleration	
		Mean	t-test	Mean	t-test
Savings (percent of GDP)	11.4	15.3	*	7.09	*
Investments (percent of GDP)	20.0	23.1	*	15.5	*
Private sector investment (percent of GDP)	12.2	13.8	*	9.17	*
Foreign direct investments net flow (percent of GDP)	2.51	4.2	*	0.72	*
Consumption (percent of GDP)	93.4	88.8	*	89.7	*
Agriculture value added (percent of GDP)	29.8	28.5		31.9	*
Industry value added (percent of GDP)	25.3	27.0	**	24.5	
Service value added (percent of GDP)	44.9	44.4		43.5	
Consumer price index (percent)	27.2	15.2		184.7	*
GDP deflator (percent)	26.9	16.7		175	*
Public debt (percent of GNI)	87.3	112.3	*	115.7	*
Government consumption (percent of GDP)	17.2	16.0	**	15.2	*
Trade (percent of GDP)	74.7	76.2		58.7	*
Exports (percent of GDP)	30.1	31.6		26.5	*
Imports (percent of GDP)	44.6	44.4		32.5	*
Real effective exchange rate (2000=100)	130.2	115.1	*	186.4	*
Terms of trade (2000=100)	109.5	102.2	*	114.5	
Current account (percent of GDP)	-5.96	-5.83		-6.03	
ODA (percent of GDP)	14.2	13.8		12.1	**
ODA per capita (\$)	57.3	69.5	*	41.8	*
Life expectancy (years)	50.8	51.3		48.2	*
Dependency ratio	0.93	0.91	**	0.93	
Under-five mortality (per 1,000)	150.4	145.8		188.7	*
Infant mortality (per 1,000 live births)	86.2	84.2		114.1	*
Primary completion rate (percent of relevant age group)	53.2	52.7		40.9	*
Country Policy and Institutional Assessment (1 low to 6 high)	3.17	3.2		2.75	*
Voice and accountability (-2.5 low to 2.5 high)	-0.65	-0.45	*	-1.08	*
Political stability (-2.5 low to 2.5 high)	-0.47	-0.45		-1.07	*
Government effectiveness (-2.5 low to 2.5 high)	-0.65	-0.58		-1.03	*
Regulatory quality (-2.5 low to 2.5 high)	-0.61	-0.49		-0.97	*
Rule of law (-2.5 low to 2.5 high)	-0.62	-0.65		-1.14	*
Control of corruption (-2.5 low to 2.5 high)	-0.55	-0.57		-0.92	*
Minor conflict (frequency)	0.09	0.08		0.16	*
Major conflict (frequency)	0.12	0.05	*	0.07	*

* indicates test that the mean is not equal to the value for normal times, significant at the 5 percent level.

** indicates that the mean is not equal to the value for normal times, significant at the 10 percent level.

Source: Arbache and Page 2007b.

governance. And more trade can stave off collapses in growth. But these are generalizations. Only country case work can provide a more accurate view.

So, is Africa's recent growth likely to last?

Per capita incomes in Africa grew at 1.9 percent a year during 1995–2005, up from -0.1 percent over 1975–95, with growth shared by countries with very different

characteristics and accompanied by better fiscal performance and better governance. But driving that growth was the high demand for minerals and particularly for oil. Resource-rich countries grew at 3.4 percent a year, oil-exporting countries at 4.5 percent, and non-oil-exporting countries at 1.3 percent. And the unconditional probability of an episode of good times was 55 percent for the resource-rich countries, 49 percent for the

Table 8 Difference between sample averages, 1985–94 and 1995–2005

Variable	All countries			Resource rich			Non-resource rich		
	1995–2005	1985–94	t-test	1995–2005	1985–94	t-test	1995–2005	1985–94	t-test
Savings (percent of GDP)	12.05	11.44		14.85	9.31	*	10.88	12.42	**
Investments (percent of GDP)	20.94	19.32	*	25.06	19.04	*	19.19	19.44	
Private sector investment (percent of GDP)	12.51	10.88	*	15.43	11.81	*	11.23	10.49	
Foreign direct investments net flow (percent of GDP)	4.95	1.48	*	8.22	1.69	*	3.63	1.40	*
Consumption (percent of GDP)	91.12	92.45		79.90	85.87	*	95.85	95.19	
Trade (percent of GDP)	76.58	67.29	*	85.77	75.29	*	72.73	63.82	*
Exports (percent of GDP)	32.27	27.71	*	40.32	34.73	*	28.86	24.67	*
Imports (percent of GDP)	44.27	39.57	*	45.25	40.55	**	43.86	39.15	*
Real effective exchange rate (2000=100)	103.52	138.32	*	109.18	145.54	*	100.06	134.38	*
Terms of trade (2000=100)	102.40	106.98	*	104.53	113.65	**	101.63	104.45	
Current account (percent of GDP)	-5.58	-5.18		-3.71	-5.22		-6.43	-5.16	**
Consumer price index (percent)	33.98	112.52		77.81	56.45		16.98	133.11	
GDP deflator (percent)	42.85	106.63		71.73	54.40		30.46	129.07	
Public debt (present value, percent of GNI)	128.41	115.16	**	163.61	146.79		114.53	101.90	**
Government consumption (percent of GDP)	15.48	17.13	*	16.44	20.52	*	15.12	15.64	

* indicates that 1985–94 and 1995–2005 values are not equal, significant at the 5 percent level.
 ** indicates that 1985–94 and 1995–2005 values are not equal, significant at the 10 percent level.
 Source: Arbache 2007.

oil-exporting countries, and 36 percent for the non-oil-exporting countries.

If growth is now more likely to last, the economic fundamentals should be stronger in 1995–2005 than they were in 1985–95. Investments in recent good times were slightly higher, but foreign direct investment and trade were significantly higher. The exchange rate was more competitive, but the terms of trade slightly less favorable. Government consumption was down slightly. And with investment basically at the same level, productivity should have increased substantially. Indeed, productivity has been one of the biggest factors behind Africa's recent growth (Ndulu and others 2007).

For resource-rich countries savings and investments and most notably foreign investment increased in the last decade, while consumption fell (table 8). The exchange rate became more competitive, and the current account improved.

For the other countries savings fell and investments remained at the same level, while current account and public debt worsened. But the exchange rate was more competitive, and trade increased.

How does Africa stand up to other developing regions? Its GDP growth is on par only with slow-growing Latin America and the

Caribbean, a third that in South Asia, and a fifth that in East Asia and Pacific. Savings and investment were well below those in all other regions. Foreign direct investment compared well, but it was concentrated in oil and minerals in only a few countries. Trade also compared well, but again it was highly concentrated and dependent on few sectors. Consumption was higher, reflecting the low propensity to save. And inflation and government consumption were higher.

The upshot? Africa's economic fundamentals on average are not much better after a decade of growth. Favoring that growth was certainly better trade conditions, but not significantly more savings and capital accumulation. Statistically it cannot be said that growth is more likely to last than it was a decade ago. It remains vulnerable to lower demand for oil and metals and to other outside shocks. What can be done to reduce that vulnerability?

Be sure to avoid the bad times while pursuing the good

To spread and sustain growth in Africa, the evidence here points to three key objectives: avoiding collapses in growth, accelerating productivity growth, and increasing private investment. This can be accomplished by

increasing the number and variety of firms and farms that can compete in the global economy. For the coastal economies this implies pushing exports, and for the landlocked, increasing their connectivity to regional and global markets through deeper regional integration. These in turn require adopting the four sets of policies proposed in *Challenges of African Growth* (Ndulu and others 2007), published this year by the World Bank's Africa Region.

- *Improving the investment climate* requires reducing indirect costs to firms, with energy and transportation topping the list of major impediments. It also requires reducing and mitigating risks, particularly those relating to crime, property security, political instability, and macroeconomic instability. Although individual countries are the focal point of action, their efforts could be pooled to coordinate policy, promote investment, improve security, and increase connectivity.
- *Improving infrastructure* is essential to reducing the transaction costs in producing goods and services. Transportation and energy make up the largest part of indirect costs for businesses, weighing heavily on the competitiveness of firms in most African countries. The focus would be on reducing the high costs associated with the remoteness of landlocked countries to facilitate their trade with neighbors and the rest of the world. Again, there will be a clear need to look beyond country borders and adopt a regional approach to coordinating cross-border infrastructure investment, maintenance, management, and use to lower costs (power pooling is an example).
- *Spurring innovation* will require investment in information technology and skill formation (higher education) to enhance productivity and

competitiveness. The potential comparative advantage of low wages in Africa is too often nullified by low productivity. Surveys of investors show that labor is not cheap where productivity is low. Information and communication technologies can be the main driver of productivity growth. And there is strong empirical evidence showing that investment in information and communication technologies and in higher education boosts competitiveness, making both key parts of the growth agenda. African countries can make a huge leap forward over antiquated technology by exploiting the technological advantages of information and communication technologies as late starters.

- *Building institutional capacity* will underpin the first three. The World Bank's Investment Climate Assessment surveys and analysis for *World Development Report 2005* (World Bank 2004) spotlight costs associated with contract enforcement difficulties, crime, corruption, and regulation as among those weighing most heavily on the profitability of enterprises. The main focus here would be to strengthen the capacity of relevant public institutions for protecting property rights and the scrutiny of, and accountability for, public action.

Action on these four fronts can accelerate growth in Africa and help countries break out of the boom-bust-stagnate cycles. The patterns described in this essay provide a guide for public policy, not a formula for success. Each country faces its own challenges and opportunities, and each country has to work within its own historical and geographical resources and constraints. Sustained faster growth in Africa is possible, if Africa's economies can meet the challenges of avoiding growth collapses, raising productivity, and boosting private investment.

Notes

1. CPIA scores in the two years are not strictly comparable because of changes in the composition of the index. They are sufficiently comparable, however, to show meaningful trends.
2. An important exception is the penetration of fixed-line and mobile telephones, where Sub-Saharan Africa leads low-income countries by as much as 13 percent. The largest gaps are for rural roads (29 percentage points) and electricity (21 percentage points).
3. Growth in Angola, Burkina Faso, Cape Verde, Republic of Congo, Eritrea, Ethiopia, Ghana, Mauritius, Mozambique, Nigeria, and Tanzania has been through an expansion of cropped area.
4. Five-year moving average based on 2001–05.
5. Five-year moving average based on 2000–04.

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