CHAPTER 1.1

Assessing Africa's Competitiveness in a Global Context

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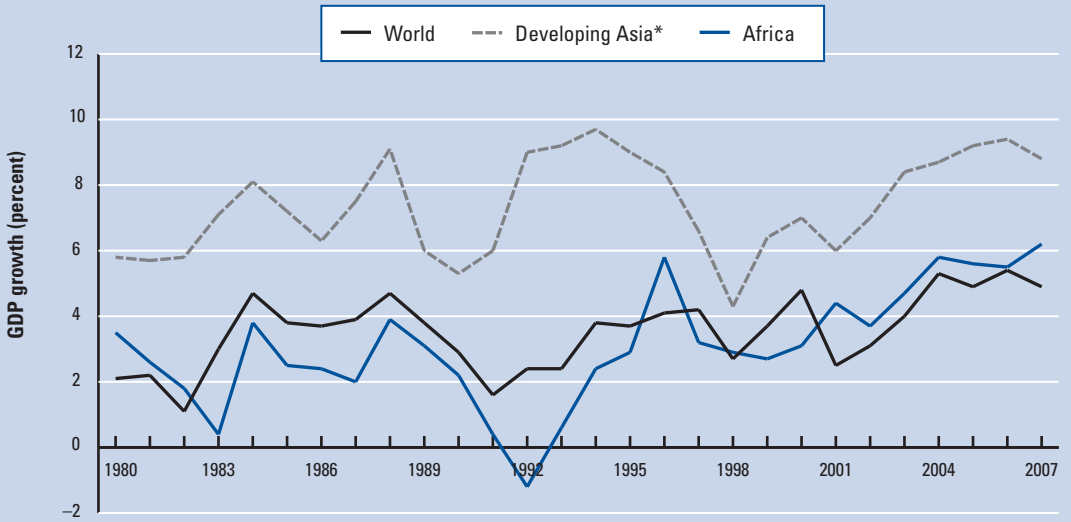
The World Economic Forum has analyzed the competitiveness of African countries since the early 1990s and has produced regional reports on the economic competitiveness of Africa for nearly a decade. The first *Africa Competitiveness Report* was published in 1998, followed by two further editions in 2000 and 2004. The goal of this series is to highlight the prospects for sustained growth in the region and, more importantly, the obstacles to competitiveness. This fourth *Report* comes amid renewed optimism against the background of a much more encouraging regional economic climate.

After many years of economic stagnation, and at times even decline, Africa is experiencing an economic resurgence. Between 2001 and 2006, growth in gross domestic product (GDP) on the continent averaged 4.9 percent annually, according to the International Monetary Fund (IMF). In 2006, Africa as a whole grew by an impressive 5.5 percent and sub-Saharan Africa in particular by 5.7 percent. In 2007 these rates are expected to increase even further—to 6.2 and 6.8 percent, respectively—the highest growth registered for decades. In parallel, foreign direct investment has been picking up, with increasing activity by booming emerging markets, drawn by the continent's rich natural resources. Accordingly, the overall outlook for the region's economic prospects is broadly optimistic.

Despite this new-found optimism, questions remain as to how sustainable this growth will be over the longer run. Even though the continent is experiencing its highest growth since the 1970s, and even though significant progress has been achieved in terms of stabilizing the macroeconomic environment in many African countries, most of the current growth has been fueled by a confluence of external circumstances and interventions, including high commodity prices, debt relief, and a favorable international economic environment. Genuinely sustainable growth, however, must be based on solid domestic foundations rather than on cyclical or exogenous circumstances. Moreover, high rates of growth over decades, like those observed in developing Asian countries, are desperately needed in Africa in order to significantly raise the living standards of its people. In this context, African countries must become more competitive.

To illustrate the importance of increasing the region's competitiveness, Figure 1 compares the growth rates of Africa with those of developing Asia and the world average since 1980. As the figure shows, throughout the 1980s and 1990s Africa's growth rates were mostly below the world average, and consistently below the developing Asia average. The figure also shows that since the beginning of this decade, African growth rates have finally exceeded those of the world average. At the same time, growth rates continue to be much lower than the group of developing countries from Asia, a region that has raised the living standards of its citizens significantly over recent decades. Indeed, these are the magnitudes of growth rates that must be achieved over a

Figure 1: Africa's comparative growth performance (1980–2007)



Source: IMF, 2007.

* Developing Asia comprises Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, and Vietnam.

long period of time in Africa in order to lift many citizens rapidly out of poverty. Present growth rates in Africa, although high by historical standards, are still short of the estimated 7 percent annual growth that would be required to meet the Millennium Development Goal (MDG) of halving poverty rates in the region by 2015.[1] With a few exceptions, income levels across the continent remain very low, and African poverty rates are the highest in the world.

Recognizing the urgency of enhancing Africa's competitiveness to improve living standards, the continent has benefited from a renewed focus and increased attention from several institutions from within the region and beyond. Within the region, the effort that has probably received the most attention is the New Partnership for Africa's Development (NEPAD).[2] Such regional efforts are joined by the various institutions of the African Union (AU) and the African Development Bank (AfDB), as well as a number of regional economic communities that are pursuing, with varying degrees of success, the economic integration of the continent's major subregions. Beyond the continent, promoting development in Africa has been high on the Group of Eight (G8)'s agenda since the 2005 summit in Gleneagles.[3]

The World Economic Forum's work on competitiveness aims to complement these efforts by contributing to a better understanding of the key ingredients of economic growth and prosperity, and by placing individual country performances into an international context. We assess a number of factors that will determine whether African countries will continue on a sustained growth path, or even accelerate that growth.

Why has Africa's overall economic performance been lagging behind other developing regions? Which are the areas requiring urgent policy attention in order to ensure sustained strong economic performance going into the future? This chapter will present a framework for addressing these questions. In order to prioritize those areas requiring urgent policy attention to improve competitiveness on the continent, the analysis will provide a bird's eye view of the competitive landscape in Africa. It will show how African countries are performing vis-à-vis each other, as well as where the region stands vis-à-vis international benchmarks, highlighting specific areas where countries in the region are lagging behind. By highlighting the strengths and weaknesses of the region and individual economies compared with other economies from around the world, policymakers, business leaders, and other stakeholders are offered an important tool for the formulation of improved economic policies, institutional reforms, and investment decisions.

The first section of this chapter describes in some detail the methodology used by the World Economic Forum in measuring national competitiveness to place the analysis in context. This is followed by a discussion of Africa's competitiveness from a global and regional perspective, comparing African countries' performances with other relevant developing countries and regions, and highlighting some differences between the geographical regions of North Africa and sub-Saharan

Africa. The next section includes a more detailed analysis of the best performers in the region across the various "pillars" of national competitiveness. This analysis shows that there are strong individual country performances in a number of areas and highlights the existence of best practices within the region. The final section provides details on the competitive performances of individual African countries, discussing both the competitive strengths and weaknesses in each, and pointing toward those areas most requiring policy attention.

Measuring competitiveness

In order to assess national competitiveness, the World Economic Forum has developed the Global Competitiveness Index (GCI).[4] *Competitiveness* is defined as the set of institutions, policies, and factors that drive productivity and therefore set the sustainable current and medium-term levels of economic prosperity.[5] In this sense competitiveness is not viewed as a zero-sum game, such as competition among companies vying for a larger portion of a given market share. Instead, by placing the focus on the drivers and the facilitators of productivity, improvements in one country's competitiveness do not exclude similar improvements in other countries.

We have learned from our years of research that the measurement of competitiveness is a complex undertaking. The GCI, albeit simple in structure, provides a holistic overview of factors that are critical to driving productivity and competitiveness, and groups them into nine pillars: *institutions* (public and private), *infrastructure*, the *macroeconomy*, *health and primary education*, *higher education and training*, *market efficiency* (goods, labor, financial), *technological readiness*, *business sophistication*, and *innovation*. Each of these pillars plays a critical role in driving national competitiveness. The GCI is the most comprehensive competitiveness index to date, measuring the macro- and microeconomic drivers of competitiveness across a large number of countries.

The selection of these pillars, as well as the factors that enter each of them, is based on the latest theoretical and empirical research. It is important to note that none of these factors alone can ensure competitiveness. The value of increased spending in education will be undermined if rigidities in the labor market and other institutional weaknesses make it difficult for new graduates to gain access to suitable employment opportunities. Attempts to improve the macroeconomic environment —for example, bringing public finances under control— are more likely to be successful and receive public support in countries where there is reasonable transparency in the management of public resources, as opposed to widespread corruption and abuse. Innovation or the adoption of new technologies or upgrading management practices will most likely not receive broad-based support in the business community if protection of the domestic market ensures that the returns to seeking rents are higher than those for new investments.

The most competitive economies in the world will therefore typically be those where concerted efforts have been made to frame policies in a comprehensive way—that is, those that recognize the importance of a broad array of factors, their interconnection, and the need to address the underlying weaknesses they reveal in a proactive way.

The nine pillars are measured using both "hard" data (such as inflation, Internet penetration, life expectancy, and school enrollment rates) from public sources and data from the World Economic Forum's Executive Opinion Survey, conducted annually among top executives in all of the countries assessed. The Survey provides crucial data on a number of qualitative issues (for example, corruption, confidence in the public sector, quality of schools) for which no hard data exist.[6]

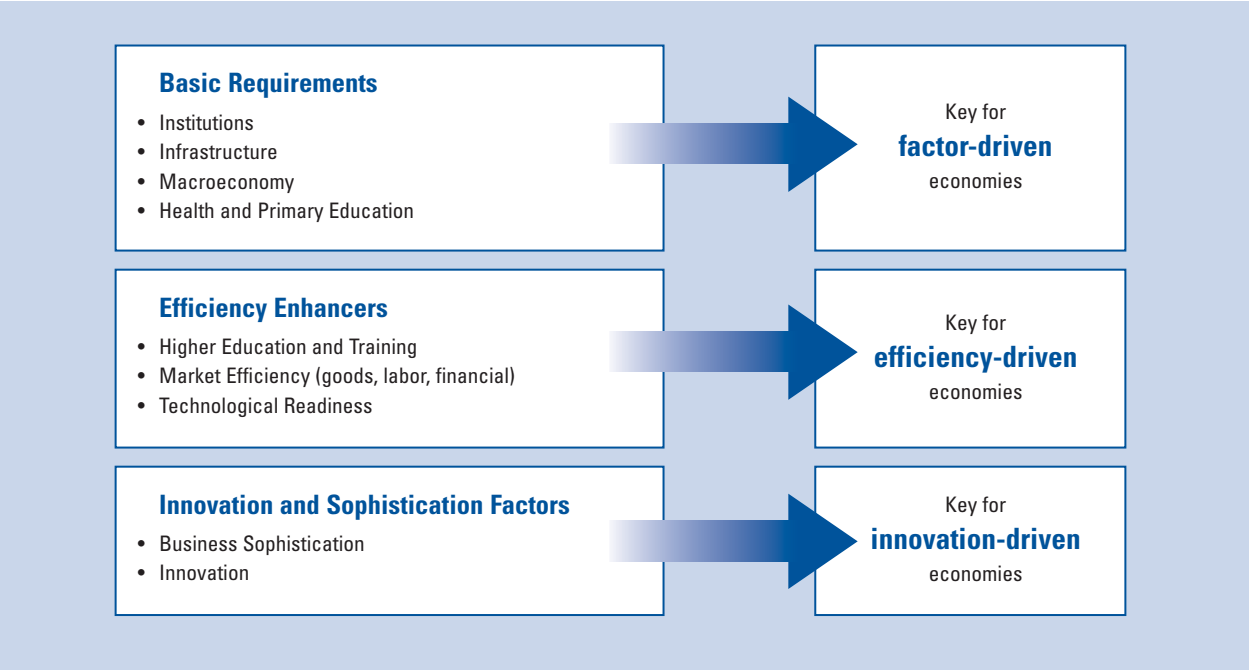
Our sample covers 128 economies at different stages of economic development, with GDP per capita in the wealthiest country surpassing that of the poorest country by a factor of 117, based on purchasing power parity. Clearly policy priorities must evolve as countries advance on the development path, since what it takes to achieve productivity improvements in a less-advanced economy—such as improving health, fighting illiteracy and corruption, or constructing basic infrastructure facilities such as roads and ports—will no longer be sufficient to increase productivity in a more sophisticated economic framework, where productivity gains from these policies have often already been exploited.

To take this process into account, the concept of stages of development has been introduced into the calculation of the Index. Specifically, countries are separated into three stages, based on the idea that as countries move along the development path, wages tend to increase, and that in order to sustain this higher income, productivity must improve. This concept is integrated into the Index by attributing higher relative weights to those pillars that are relatively more relevant for a country given its particular stage of development.

In the *factor-driven* stage countries compete based on their factor endowments, primarily unskilled labor and natural resources. Companies compete on the basis of prices and sell basic products or commodities, with their low productivity reflected in low wages. To maintain competitiveness at this stage of development, competitiveness hinges mainly on a stable macroeconomic framework (pillar 1), well-functioning public and private institutions (pillar 2), appropriate infrastructure (pillar 3), and a healthy, literate workforce (pillar 4).

As wages rise with advancing development, countries move into the *efficiency-driven* stage of development, when they must begin to develop more efficient production processes and increase product quality. At this point, competitiveness becomes increasingly driven by higher education and training (pillar 5), efficient markets (pillar

Figure 2: Composition of the three subindexes



6), and the ability to harness the benefits of existing technologies (pillar 7).

Finally, as countries move into the *innovation-driven* stage, they are able to sustain higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. At this stage, companies must compete through innovation (pillar 9), producing new and different goods using the most sophisticated production processes (pillar 8). Thus, although all nine pillars matter to a certain extent for all countries, the importance of each one depends on a country's particular stage of development.

To account for this, the pillars are organized into three subindexes, each critical to a particular stage of development. The *basic requirements subindex* groups those pillars most critical for countries in the factor-driven stage. The *efficiency enhancers subindex* includes those pillars critical for countries in the efficiency-driven stage. And the *innovation and sophistication factors subindex* includes all pillars critical to countries in the innovation driven stage. The three subindexes are shown in Figure 2.

The GCI implements the concept of developmental stages by weighting each of the subindexes differently, depending on the stage of a given country, placing more weight on those pillars that are most important at a given stage of a country's development. The specific weights we attribute to each subindex in every stage of development are shown in Table 1.[7]

For the calculation of the Index, the countries are allocated to stages of development based on two criteria.

Table 1: Weights of the three main groups of pillars at each stage of development

Weights	Basic requirements (percent)	Efficiency enhancers (percent)	Innovation and sophistication factors (percent)
Factor-driven stage	50	40	10
Efficiency-driven stage	40	50	10
Innovation-driven stage	30	40	30

The first criterion is the level of current GDP per capita at market exchange rates. This widely available measure is used as a proxy for wages, because internationally comparable data for the latter are not available for all countries covered.[8] In addition, we have updated our methodology to also take into account the extent to which each individual economy is factor-based, using the share of primary exports as a percentage of total exports (goods and services) to measure factor intensity.[9]

The GCI also takes into account that some countries are "in transition" between stages. For these countries, the weights change smoothly as a country develops, reflecting the smooth transition from one stage of development to another. By introducing this type of transition between stages into the model—that is, by placing increasingly more weight on those areas that are becoming more important for the country's competitiveness as the country develops—the Index can gradually "penalize" those countries that are not preparing for the next stage and "reward" those that are doing so. The classification

Table 2: List of selected countries in each stage of development

Stage 1	Transition from 1 to 2	Stage 2	Transition from 2 to 3	Stage 3
Angola	**Algeria**	Brazil	Barbados	Australia
Bangladesh	Bosnia and Herzegovina	Bulgaria	Czech Republic	Austria
Benin	**Botswana**	Chile	Estonia	Canada
Bolivia	Colombia	Costa Rica	Hungary	Cyprus
Burkina Faso	Ecuador	Croatia	Korea, Rep.	Denmark
Burundi	El Salvador	Kazakhstan	Malta	Finland
Cambodia	Jordan	Latvia	Trinidad and Tobago	France
Cameroon	**Libya**	Lithuania		Germany
Chad	Macedonia, FYR	Malaysia		Greece
China	**Namibia**	**Mauritius**		Hong Kong SAR
Egypt	Peru	Mexico		Ireland
Ethiopia	Thailand	Poland		Italy
Gambia	**Tunisia**	Romania		Japan
Georgia	Venezuela	Russian Federation		Netherlands
Guatemala		Slovak Republic		Norway
India		**South Africa**		Singapore
Indonesia		Turkey		Spain
Kenya		Uruguay		Sweden
Lesotho				Switzerland
Madagascar				United Arab Emirates
Malawi				United Kingdom
Mali				United States
Mauritania				
Moldova				
Mongolia				
Morocco				
Mozambique				
Nepal				
Nigeria				
Pakistan				
Philippines				
Sri Lanka				
Tanzania				
Uganda				
Ukraine				
Vietnam				
Zambia				
Zimbabwe				

of countries into stages of development is shown in Table 2. Appendix A describes the exact composition of the GCI, and Appendix B provides further technical details on its construction.

Table 2 shows the allocation of African countries into the different stages of development. The table shows that all of the 29 countries in Africa analyzed in this chapter, shown in bold, are categorized in or between the first two stages—none has yet reached the innovation stage. Specifically, 22 African countries are in stage 1, 5 are in transition between stages 1 and 2, and only 2 countries—Mauritius and South Africa—have reached stage 2.

The GCI calculations in this *Report* have been updated since the *Global Competitiveness Report 2006–2007*. Specifically, three Arab world countries have been added to the sample, including one African country, Libya, which appears in our work this year for the first time. Further, a number of the hard data variables included in the Index, particularly those related to technology, have been updated. All of the data included in the calculation are provided in the Competitiveness Profiles of Part 2 of this *Report*.

Measuring Africa's competitiveness: The international context

This section will assess the performance of individual African countries, as well as the overall competitiveness of Africa as a region, compared with international standards. Table 3 shows the rankings and scores of the 29 African countries covered in the 2007 GCI out of all 128 countries covered. The table also shows their rankings in 2005 for comparison. To put the analysis into a global context, we also include a number of comparator economies. These include the averages of two relevant developing regions—Latin America and Southeast Asia—as well as the ranks and scores of the four rapidly

Table 3: Global Competitiveness Index, 2007 and 2005 comparisons

	GCI 2007		GCI 2005
Country/Region	Rank*	Score	Rank**
Tunisia	29	4.72	37
India	42	4.47	45
South Africa	46	4.42	40
China	55	4.25	48
Southeast Asia average		**4.25**	
Mauritius	58	4.22	55
Russian Federation	61	4.13	53
Egypt	65	4.09	52
Brazil	67	4.08	57
Latin America & Caribbean average		**4.07**	
Morocco	72	4.02	76
Libya	73	4.00	—
Algeria	76	3.98	82
Botswana	83	3.83	72
Namibia	88	3.76	79
Kenya	97	3.61	93
Nigeria	102	3.49	83
Gambia	104	3.45	109
Benin	107	3.41	106
Tanzania	108	3.40	105
Cameroon	111	3.32	—
Madagascar	113	3.29	107
Lesotho	115	3.24	—
Uganda	116	3.21	103
Zambia	117	3.21	—
Mauritania	118	3.18	—
Burkina Faso	119	3.10	—
Malawi	120	3.09	114
Zimbabwe	121	3.07	110
Mali	122	3.04	115
Ethiopia	123	3.00	116
Mozambique	124	2.97	112
Chad	126	2.64	117
Burundi	127	2.62	—
Angola	128	2.50	—

*Out of 128 economies; ** Out of 117 economies
Note: All averages are weighted by population.

developing and large "BRIC" countries (Brazil, Russia, India, and China).

As the table shows, of all the countries covered Tunisia is the strongest performer, ranked among the top 30 of all countries included in the Index. Tunisia also outperforms all other comparator economies shown in the table. Within Africa, Tunisia is followed by South Africa and Mauritius, ranked 46th and 58th, respectively. A bit farther down in the rankings are the other North African countries, namely Egypt, Morocco, Libya, and Algeria, ranked 65th, 72nd, 73rd, and 76th, respectively. All other countries ranked below Algeria are from the sub-Saharan region, with Botswana, Namibia, and Kenya as the only three other countries within the top 100 countries ranked. All of the other 19 countries from sub-Saharan Africa rank among the 27 weakest performers occupying ranks of 102 or lower.

Tables 4 through 7 provide more details behind what is driving the overall ranks and scores shown in Table 3. North Africa and sub-Saharan Africa have radically different competitive performances, as shown by the averages in Table 4. Specifically, North Africa outperforms the average of the other countries on the continent in all three subindexes measured by the Index, as well as all nine pillars. The largest gaps can be found in the areas of health and primary education, higher education and training, infrastructure, and the macroeconomic environment. The smallest gaps are in market efficiency, technological readiness, and innovation.

The gaps between the north and south of the continent are echoed in many of the comparisons with the other regions and selected countries shown in the tables. Sub-Saharan Africa is, on average, outperformed by all comparators in seven out of the nine pillars: namely, infrastructure, health and primary education, higher education and training, market efficiency, technological readiness, business sophistication, and innovation. Again, the largest performance gaps relative to the comparators are in infrastructure, health and primary education, and higher education and training. However, we note that, on average, sub-Saharan Africa outperforms a few countries in the remaining two pillars. This includes Russia, China, and, narrowly, Brazil with regard to the quality of the institutional environment, and Brazil with regard to macroeconomic stability. Yet overall, it is clear that sub-Saharan Africa's competitive performance trails well behind that of other developing countries and regions.

By contrast, Table 5 shows that North Africa on average matches up quite well to many of the comparators shown across a number of areas. For example, North Africa outperforms all comparators except for India in the area of institutions. Its infrastructure is assessed as more developed than all comparators except for Russia and China (with scores very close to the North African average). The region's macroeconomic environment is more stable than in all comparators except China, Russia, and the Southeast Asia average. With regard to health and primary education, North Africa scores higher than India, Russia, Latin America, and Southeast Asia, and is on a par with China. In other words, North Africa performs well compared with the other economies shown in the tables in the more basic areas measured by the Index.

The competitive landscape in North Africa and sub-Saharan Africa get closer to each other once we move beyond the basic factors. Tables 6 and 7 show their comparative performance in more complex factors, such as technological readiness, market efficiency, innovation, and so forth, where North Africa performs more modestly. In fact, for most of the five pillars captured under the efficiency enhancers, innovation, and sophistication factors subindexes, North Africa and sub-Saharan Africa alike receive the worst assessments of all countries and regions shown in the tables. This is true for market efficiency, technological readiness, business sophistication, and innovation. Only in the area of higher education and training does North Africa very slightly outperform another comparator—China—but by a negligible margin.

Table 4: The Global Competitiveness Index 2007: Africa and comparators

	OVERALL INDEX		SUBINDEXES					
			Basic requirements		Efficiency enhancers		Innovation factors	
Country/Region	Rank	Score	Rank	Score	Rank	Score	Rank	Score
NORTH AFRICA								
Algeria	76	3.98	44	4.91	92	3.30	92	3.22
Egypt	65	4.09	64	4.55	75	3.63	65	3.63
Libya	73	4.00	45	4.87	95	3.25	97	3.16
Morocco	72	4.02	70	4.45	77	3.60	73	3.54
Tunisia	29	4.72	33	5.27	40	4.34	28	4.42
North Africa average		**4.09**		**4.67**		**3.58**		**3.56**
SUB-SAHARAN AFRICA								
Angola	128	2.50	128	2.48	126	2.51	126	2.52
Benin	107	3.41	106	3.74	107	3.04	90	3.23
Botswana	83	3.83	82	4.30	80	3.54	98	3.15
Burkina Faso	119	3.10	124	3.17	112	2.96	86	3.27
Burundi	127	2.62	127	2.73	127	2.46	121	2.66
Cameroon	111	3.32	108	3.71	117	2.91	104	3.05
Chad	126	2.64	126	2.90	128	2.35	125	2.53
Ethiopia	123	3.00	118	3.31	123	2.69	119	2.72
Gambia	104	3.45	105	3.84	103	3.11	115	2.89
Kenya	97	3.61	109	3.70	83	3.47	59	3.73
Lesotho	115	3.24	107	3.72	122	2.81	123	2.59
Madagascar	113	3.29	114	3.60	116	2.92	91	3.23
Malawi	120	3.09	119	3.30	119	2.87	112	2.93
Mali	122	3.04	123	3.19	121	2.83	96	3.17
Mauritania	118	3.18	117	3.41	113	2.94	108	2.98
Mauritius	58	4.22	50	4.74	62	3.88	47	3.84
Mozambique	124	2.97	122	3.25	124	2.63	118	2.86
Namibia	88	3.76	72	4.44	93	3.29	88	3.25
Nigeria	102	3.49	113	3.60	90	3.33	69	3.60
South Africa	46	4.42	57	4.66	45	4.24	29	4.35
Tanzania	108	3.40	115	3.56	96	3.17	77	3.49
Uganda	116	3.21	121	3.27	100	3.12	83	3.30
Zambia	117	3.21	116	3.52	109	3.01	127	2.43
Zimbabwe	121	3.07	125	3.09	108	3.03	94	3.18
Sub-Saharan Africa average		**3.29**		**3.55**		**3.05**		**3.12**
BRICs								
Brazil	67	4.08	88	4.23	58	3.96	38	4.09
China	55	4.25	47	4.82	72	3.66	57	3.75
India	42	4.47	63	4.56	41	4.33	26	4.60
Russian Federation	61	4.13	68	4.49	59	3.96	72	3.55
Latin America and Caribbean average		**4.07**		**4.41**		**3.83**		**3.75**
Southeast Asia average		**4.25**		**4.53**		**4.01**		**3.90**

Note: All averages are weighted by population.

Although North Africa has made relative progress in some basic areas of competitiveness, much remains to be achieved in Africa as a whole in order to achieve higher rates of growth, create jobs, and boost income.

Of course, the aggregate analysis of this section masks a great deal of the diversity among individual country performances within the region in the various pillars. Table 8 shows the rankings of African countries in the nine pillars of the Index, highlighting the three best performers in each case. The table shows that Tunisia is one of the top three performers in all of the pillars, while South Africa is one of the top performers in six of them and Mauritius in five, mirroring these countries' positions at the top of the overall rankings. The table also reveals notable comparative strengths in several other African countries in specific areas.

Tunisia, South Africa, and Botswana have strong institutional environments (ranked 26th, 31st, and 38th, respectively), on a par with countries such as Chile, Estonia, and Spain. These countries have common strengths such as independent judiciaries, efficient government spending, and relatively low levels of corruption, leading to public trust in politicians. Private institutions are also positively assessed, including corporate ethics and aspects of corporate governance. Other countries in the top half of the rankings are Mauritius (43rd), Namibia (49th), Egypt (50th), Zambia (56th), and Gambia (57th), with rankings similar to countries such

Table 5: The Global Competitiveness Index 2007: Basic requirements

Country/Region	Basic requirements Rank	Basic requirements Score	1. Institutions Rank	1. Institutions Score	2. Infrastructure Rank	2. Infrastructure Score	3. Macroeconomy Rank	3. Macroeconomy Score	4. Health and primary education Rank	4. Health and primary education Score
NORTH AFRICA										
Algeria	44	4.91	65	3.95	80	2.93	2	6.19	46	6.56
Egypt	64	4.55	50	4.21	56	3.74	111	3.75	51	6.51
Libya	45	4.87	75	3.81	100	2.46	1	6.95	81	6.26
Morocco	70	4.45	68	3.89	61	3.58	81	4.24	89	6.07
Tunisia	33	5.27	26	5.06	37	4.42	39	4.91	33	6.69
North Africa average		**4.67**		**4.13**		**3.53**		**4.57**		**6.44**
SUB-SAHARAN AFRICA										
Angola	128	2.48	123	3.02	116	2.07	126	2.40	128	2.45
Benin	106	3.74	87	3.57	117	2.06	95	4.04	104	5.29
Botswana	82	4.30	38	4.53	67	3.38	41	4.85	115	4.42
Burkina Faso	124	3.17	67	3.92	113	2.15	119	3.37	127	3.24
Burundi	127	2.73	115	3.20	126	1.71	125	2.51	123	3.50
Cameroon	108	3.71	120	3.11	124	1.93	42	4.83	107	4.96
Chad	126	2.90	128	2.66	128	1.43	110	3.76	122	3.74
Ethiopia	118	3.31	91	3.55	105	2.34	98	3.98	124	3.39
Gambia	105	3.84	57	4.11	97	2.62	108	3.77	110	4.85
Kenya	109	3.70	92	3.55	89	2.75	102	3.91	113	4.59
Lesotho	107	3.72	89	3.56	121	2.00	54	4.64	112	4.69
Madagascar	114	3.60	98	3.43	119	2.03	118	3.39	103	5.53
Malawi	119	3.30	66	3.94	118	2.06	127	2.31	109	4.89
Mali	123	3.19	71	3.84	115	2.09	116	3.48	125	3.34
Mauritania	117	3.41	72	3.83	114	2.10	123	2.82	108	4.91
Mauritius	50	4.74	43	4.40	42	4.21	107	3.79	44	6.58
Mozambique	122	3.25	112	3.25	102	2.41	115	3.50	120	3.85
Namibia	72	4.44	49	4.23	45	4.16	45	4.79	114	4.58
Nigeria	113	3.60	93	3.53	108	2.26	57	4.62	119	3.98
South Africa	57	4.66	31	4.79	50	4.04	48	4.74	106	5.07
Tanzania	115	3.56	64	3.95	96	2.65	103	3.88	121	3.76
Uganda	121	3.27	103	3.38	122	1.99	69	4.42	126	3.29
Zambia	116	3.52	56	4.11	90	2.75	122	3.07	118	4.17
Zimbabwe	125	3.09	101	3.39	101	2.44	128	2.20	116	4.32
Sub-Saharan Africa average		**3.55**		**3.65**		**2.45**		**4.00**		**4.04**
BRICs										
Brazil	88	4.23	85	3.63	72	3.32	117	3.42	48	6.54
China	47	4.82	96	3.51	60	3.62	8	5.72	56	6.44
India	63	4.56	33	4.71	63	3.51	91	4.12	96	5.90
Russian Federation	68	4.49	119	3.16	62	3.57	35	4.95	78	6.29
Latin America and Caribbean average		**4.41**		**3.69**		**3.25**		**4.20**		**6.51**
Southeast Asia average		**4.53**		**4.08**		**3.12**		**4.61**		**6.30**

Note: All averages are weighted by population.

as Costa Rica, Hungary, and Korea. Representing both North and sub-Saharan Africa, with relatively strong institutions by international standards, these countries provide examples for other countries in the region wishing to improve their institutional environments. This is particularly important given that, among the 29 countries shown in the table, 13 are in the bottom third of all countries covered, pointing to the regional improvements needed in this area.

With regard to infrastructure, Tunisia, Mauritius, and Namibia are the three best-performing countries, ranked 37th, 42nd, and 45th, respectively—they are better assessed than some European countries, including Italy and Poland. Particularly high ranked are the quality of their ports, the quality of railroads (in Tunisia and Namibia), and the electricity supply (particularly in Tunisia and Mauritius). The main weakness in all three countries is the low telephone line penetration rate (a weakness of decreasing importance given the rapid rise of mobile phone penetration). Yet, despite these few relatively strong cases, the only other countries assessed within the top half of all 128 countries are South Africa, Egypt, and Morocco (ranked 50th, 56th, and 61st). All other countries are ranked 80th or lower, with more than half of the countries ranked below 100th place. This emphasizes the importance of upgrading infrastructure on the continent to improve competitiveness.

Table 6: The Global Competitiveness Index 2007: Efficiency enhancers

Country/Region	Efficiency enhancers Rank	Efficiency enhancers Score	5. Higher education and training Rank	5. Higher education and training Score	6. Market efficiency Rank	6. Market efficiency Score	7. Technological readiness Rank	7. Technological readiness Score
NORTH AFRICA								
Algeria	92	3.30	86	3.46	97	3.67	93	2.75
Egypt	75	3.63	77	3.73	66	4.15	80	3.01
Libya	95	3.25	73	3.88	121	3.39	115	2.48
Morocco	77	3.60	87	3.45	75	4.07	70	3.27
Tunisia	40	4.34	36	4.72	36	4.65	47	3.65
North Africa average		**3.58**		**3.69**		**4.03**		**3.03**
SUB-SAHARAN AFRICA								
Angola	126	2.51	128	1.92	123	3.37	124	2.25
Benin	107	3.04	104	2.96	96	3.68	114	2.48
Botswana	80	3.54	89	3.41	61	4.20	81	3.00
Burkina Faso	112	2.96	119	2.51	89	3.81	106	2.57
Burundi	127	2.46	126	2.16	126	3.28	128	1.96
Cameroon	117	2.91	106	2.85	117	3.45	116	2.43
Chad	128	2.35	127	1.99	127	3.07	127	1.99
Ethiopia	123	2.69	123	2.39	119	3.41	123	2.26
Gambia	103	3.11	109	2.81	88	3.82	94	2.70
Kenya	83	3.47	90	3.41	73	4.10	83	2.91
Lesotho	122	2.81	118	2.52	120	3.41	112	2.50
Madagascar	116	2.92	116	2.55	100	3.63	103	2.59
Malawi	119	2.87	122	2.46	91	3.77	121	2.38
Mali	121	2.83	121	2.48	104	3.62	119	2.40
Mauritania	113	2.94	124	2.33	103	3.62	85	2.88
Mauritius	62	3.88	69	3.94	70	4.11	54	3.58
Mozambique	124	2.63	125	2.30	125	3.32	122	2.28
Namibia	93	3.29	108	2.82	80	4.00	79	3.04
Nigeria	90	3.33	103	3.04	71	4.10	90	2.85
South Africa	45	4.24	56	4.17	34	4.68	44	3.87
Tanzania	96	3.17	115	2.56	76	4.07	87	2.87
Uganda	100	3.12	110	2.78	85	3.90	97	2.68
Zambia	109	3.01	120	2.48	86	3.87	96	2.68
Zimbabwe	108	3.03	99	3.10	115	3.48	110	2.51
Sub-Saharan Africa average		**3.05**		**2.84**		**3.86**		**2.71**
BRICs								
Brazil	58	3.96	61	4.10	59	4.21	53	3.58
China	72	3.66	79	3.68	55	4.23	78	3.08
India	41	4.33	49	4.35	20	5.09	56	3.56
Russian Federation	59	3.96	43	4.44	60	4.20	72	3.25
Latin America and Caribbean average		**3.83**		**3.92**		**4.13**		**3.42**
Southeast Asia average		**4.01**		**4.09**		**4.64**		**3.30**

Note: All averages are weighted by population.

The macroeconomic environment presents an interesting case, as Africa is home to both the strongest and weakest performances in this area. Table 8 shows that the two best-rated countries out of all countries in the region are Libya and Algeria—two countries that have benefited from windfall oil revenues that have significantly improved their public finances. These countries have high government budget surpluses, manageable debt, high national savings rates, and at the same time they have managed to keep inflation rates low. The third highest ranked country is Tunisia (39th), an oil importer, which has also managed to tame inflation and has reasonably balanced public finances. A number of other countries have satisfactory assessments in this area, such as Botswana (41st), Cameroon (42nd), Namibia (45th), and South Africa (48th), all ranked among the top 50 countries. On the other hand, the macroeconomic environment of most countries is assessed as very weak, with 18 of the 29 African countries ranked among the bottom third. In particular we see that Zambia, Mauritania, Burundi, Angola, Malawi, and Zimbabwe round out the bottom of all countries assessed, joined only by Guyana from outside the region (124th). Box 1 looks at recent macroeconomic trends in Africa. Although much clearly remains to be done to foster a more stable economic environment in many countries of the region, the box describes how the overall picture has been improving in recent years.

Table 7: The Global Competitiveness Index 2007: Innovation and sophistication factors

Country/Region	Innovation factors Rank	Innovation factors Score	8. Business sophistication Rank	8. Business sophistication Score	9. Innovation Rank	9. Innovation Score
NORTH AFRICA						
Algeria	92	3.22	106	3.36	77	3.09
Egypt	65	3.63	57	4.22	83	3.04
Libya	97	3.16	88	3.57	98	2.75
Morocco	73	3.54	80	3.82	61	3.26
Tunisia	28	4.42	31	4.80	27	4.05
North Africa average		**3.56**		**3.97**		**3.15**
SUB-SAHARAN AFRICA						
Angola	126	2.52	126	2.74	124	2.30
Benin	90	3.23	87	3.58	91	2.87
Botswana	98	3.15	98	3.43	92	2.87
Burkina Faso	86	3.27	101	3.40	70	3.14
Burundi	121	2.66	120	3.01	122	2.32
Cameroon	104	3.05	104	3.37	100	2.73
Chad	125	2.53	124	2.81	125	2.26
Ethiopia	119	2.72	123	2.94	117	2.50
Gambia	115	2.89	109	3.30	118	2.48
Kenya	59	3.73	68	4.04	48	3.42
Lesotho	123	2.59	125	2.80	120	2.37
Madagascar	91	3.23	102	3.39	78	3.07
Malawi	112	2.93	116	3.16	106	2.70
Mali	96	3.17	110	3.29	81	3.04
Mauritania	108	2.98	105	3.36	111	2.60
Mauritius	47	3.84	44	4.44	65	3.23
Mozambique	118	2.86	117	3.13	113	2.58
Namibia	88	3.25	85	3.60	89	2.91
Nigeria	69	3.60	75	3.87	52	3.33
South Africa	29	4.35	32	4.79	29	3.92
Tanzania	77	3.49	83	3.68	56	3.30
Uganda	83	3.30	93	3.49	73	3.11
Zambia	127	2.43	128	2.51	121	2.35
Zimbabwe	94	3.18	92	3.50	94	2.86
Sub-Saharan Africa average		**3.12**		**3.57**		**3.05**
BRICs						
Brazil	38	4.09	38	4.61	38	3.56
China	57	3.75	65	4.05	46	3.44
India	26	4.60	25	5.06	26	4.14
Russian Federation	72	3.55	79	3.83	59	3.28
Latin America/Caribbean average		**3.75**		**4.26**		**3.25**
Southeast Asia average		**3.90**		**4.33**		**3.48**

Note: All averages are weighted by population.

Given the importance of basic factors such as primary education and the health of the workforce, the results in this pillar for the countries of Africa are disconcerting. Table 8 shows that the three countries best assessed in this area are Tunisia (33rd), Mauritius (44th), and Algeria (46th). These countries have attained relatively high rates of primary enrollment and have health indicators that compare well with the rest of Africa, and are on a par with economies such as Estonia and Hong Kong. They are joined in the top half of the rankings by Egypt (51st). Only Libya out of the 25 remaining countries is ranked in the top two thirds. With weak health indicators; high prevalence rates of diseases such as malaria, tuberculosis, and HIV/AIDS; and low primary enrollment rates by international standards, 22 of the 25 lowest-ranked countries are from sub-Saharan Africa, and countries from the region fill out all 11 lowest ranks. Further, many African countries have experienced a significant deterioration in this area on a comparative basis in recent decades, as described in Box 2. It is clear that improving these aspects of the human resources base requires urgent attention to bring the region up to higher levels of competitiveness.

Table 8: Top three African performers in each pillar of the GCI

	1. Institutions	2. Infrastructure	3. Macroeconomy	4. Health and primary education	5. Higher education and training	6. Market efficiency	7. Technological readiness	8. Business sophistication	9. Innovation
Country	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
Algeria	65	80	**2**	**46**	86	97	93	106	77
Angola	123	116	126	128	128	123	124	126	124
Benin	87	117	95	104	104	96	114	87	91
Botswana	**38**	67	41	115	89	**61**	81	98	92
Burkina Faso	67	113	119	127	119	89	106	101	70
Burundi	115	126	125	123	126	126	128	120	122
Cameroon	120	124	42	107	106	117	116	104	100
Chad	128	128	110	122	127	127	127	124	125
Egypt	50	56	111	51	77	66	80	57	83
Ethiopia	91	105	98	124	123	119	123	123	117
Gambia	57	97	108	110	109	88	94	109	118
Kenya	92	89	102	113	90	73	83	68	**48**
Lesotho	89	121	54	112	118	120	112	125	120
Libya	75	100	**1**	81	73	121	115	88	98
Madagascar	98	119	118	103	116	100	103	102	78
Malawi	66	118	127	109	122	91	121	116	106
Mali	71	115	116	125	121	104	119	110	81
Mauritania	72	114	123	108	124	103	85	105	111
Mauritius	43	**42**	107	**44**	**69**	70	**54**	**44**	65
Morocco	68	61	81	89	87	75	70	80	61
Mozambique	112	102	115	120	125	125	122	117	113
Namibia	49	**45**	45	114	108	80	79	85	89
Nigeria	93	108	57	119	103	71	90	75	52
South Africa	**31**	50	48	106	**56**	**34**	**44**	**32**	**29**
Tanzania	64	96	103	121	115	76	87	83	56
Tunisia	**26**	**37**	**39**	**33**	**36**	**36**	**47**	**31**	**27**
Uganda	103	122	69	126	110	85	97	93	73
Zambia	56	90	122	118	120	86	96	128	121
Zimbabwe	101	101	128	116	99	115	110	92	94
Global leader	**Finland**	**Germany**	**Libya**	**Japan**	**Finland**	**Hong Kong**	**Sweden**	**Germany**	**Japan**

The quantity and quality of higher education and training becomes increasingly important for countries aiming to improve the efficiency of their business environments. In Africa, with the exception of Tunisia (36th) and to a certain extent South Africa (56th), the assessment is quite bleak. The third best assessed country is Mauritius, at a low 69th rank overall. Except for a couple of North African countries (Egypt and Libya), all other countries are ranked in the bottom third of all 128 countries. Enrollment rates at the secondary and tertiary levels throughout the region remain low, educational systems suffer from poor quality, and in many countries companies are not providing on-the-job training to compensate for these weaknesses. Upgrading educational systems, ensuring higher enrollment levels, and inculcating a stronger culture of training will be important for Africa as it continues on its path of development.

The efficiency of markets for goods and services, labor, and financial interactions are also important for ensuring the proper allocation of resources across the economy. In Africa, two countries are evaluated as having efficient markets: South Africa (34th) and Tunisia (36th), comparing well with countries such as Belgium and Spain. South Africa is particularly well assessed for the efficiency of its goods markets (17th) and financial markets (27th), despite significant stickiness in its labor markets. Tunisia, on the other hand, has quite efficient and flexible labor markets (30th) and well functioning goods markets (32nd), although its financial markets are less developed (45th). There are a number of additional success stories. For example, Zambia's labor markets are rated very positively (26th), ahead of all other countries in the region, and Mauritius' financial market sophistication is second only to South Africa's on the continent (38th). However, as indicated by the overall ranking shown in Table 8, market inefficiencies abound within most other countries in the region. The greatest weaknesses are in the areas of goods and financial market efficiency, where the large majority of African countries are ranked in the bottom third of all countries, with several all the way at the bottom.

Technology is an important productivity enhancer, especially for those countries aiming to move up the value chain. As Table 8 shows, Africa as a whole is not harnessing these tools sufficiently. The three best-ranked countries from Africa—South Africa, Tunisia, and Mauritius—all receive mediocre assessments in technological readiness (ranked 44th, 47th, and 54th respectively),

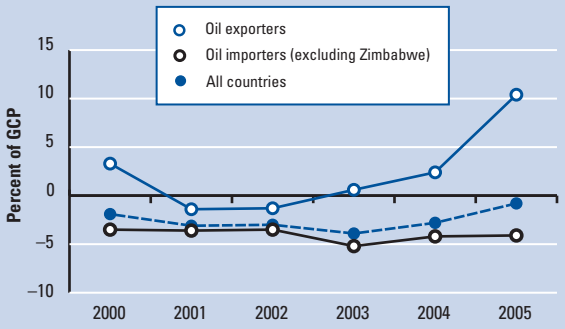
Box 1: An improving macroeconomic landscape

Macroeconomic stability constitutes a key element of national competitiveness. It is extremely difficult for businesses to make informed decisions when inflation is spiraling out of control or when large government budget deficits lead to the misallocation of resources and drive up the cost of capital. When the repayment of government debt is devouring a major portion of a country's resources, those resources cannot be allocated effectively. Often, where debt servicing costs are high, governments must curtail public investment or, worse, vital spending on education and public health, which erodes the competitive potential of the country.

The rankings in the macroeconomy pillar in this chapter demonstrate that many African countries are facing obstacles in these areas. However, a look at macroeconomic trends shows that in recent years African countries have come a long way toward improving their macroeconomic stability. This has been in part due to windfall revenues in the oil-producing countries, but it has also been the outcome of more coherent policymaking in many countries, further supported, in some cases, by increased aid flows and debt relief. Improvements have been both fiscal and monetary, concerning both government finance (budget balances and debt) and the curtailing of inflation.

To start with, there has been an overall improvement in public finances in most African countries over the past few years. Figure 1 shows average trends in the budget balance within the countries covered in this chapter. The figure shows the regional average, as well as those of the oil exporting and importing countries. On average the trend has been positive for the past three years for all countries. This is particularly striking for the oil exporters, which have seen an explosion in budget surpluses (due to windfall oil profits). Of course, it will be important for these countries to use the gains from the present boom to lay the basis for sustained economic growth, investing in critical areas such as improved infrastructure, health, and human resource development. In that respect, it is notable that some oil-exporting countries have made efforts to improve the transparency of their petroleum-sector operations and introduce fiscal rules for the use of oil revenue (although there has been some backtracking which is worrisome, such as in the case of Chad).

Figure 1: Government budget balance (2000–05) for African countries



Source: African Development Bank, 2006; IMF Country Reports.

The figure also shows that while the oil importers on the continent are on average still running deficits, these deficits have been shrinking since 2003. The IMF expects the fiscal position in these countries to continue to improve despite increased expenditures to meet the Millennium Development Goals. Expenditures are being financed by efforts to increase domestic revenue, as well as debt relief.[1]

As is well known, debt levels have also declined significantly throughout the continent over the last decade, in great part attributable to debt relief initiatives. Table 1 shows the extent of this decline, comparing the external debt (as a percentage of GDP) between the period 1995–2004 and 2005, on average, for the 29 economies analyzed in this chapter. As the table shows, external debt has come down by close to 30 percent in the region, placing most countries on a more stable economic footing. Only five countries (Burundi, Gambia, Malawi, Namibia, and Zimbabwe) saw increases in this measure of external debt over the period.

Table 1. External government debt as a percentage of GDP

Subregion	1995–2004	2005
Africa	77.0	55.6
North Africa	44.0	30.1
Sub-Saharan Africa	83.9	60.9

Source: African Development Bank, 2006.

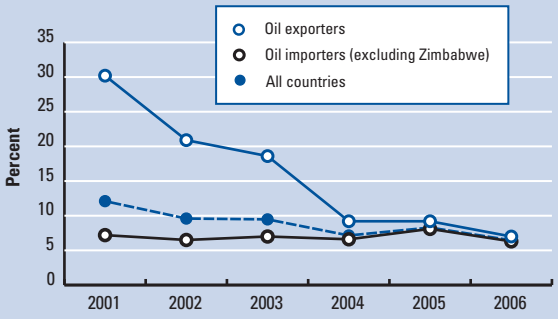
Besides better fiscal management, a variety of initiatives have contributed to these improvements in the public finances. After declining significantly throughout much of the 1990s, aid levels worldwide have increased in recent years, with Africa as the largest beneficiary. The launch of NEPAD, the Monterrey consensus on financing for development in 2002, the implementation of the Heavily Indebted Poor Countries (HIPC) initiative, and the commitments made at the G8 Gleneagles summit have all played important roles in increasing flows of development finance to Africa.[2]

Turning to monetary policy, there has also been significantly better overall control of inflation, as shown in Figure 2. As the figure shows, inflation has been steadily coming down in Africa (excluding Zimbabwe) since 2000 to historically low levels despite increasing oil prices. The figure shows that this is the case for both the oil exporters as well as the oil importers, although it is most striking for the exporters. Although inflation in Africa remains somewhat high by international standards at over 6 percent in 2006, given that, in 1996, 13 of the 29 countries covered had at least double-digit inflation (and in many cases significantly higher), present levels are remarkably low. In reducing inflation, the region has profited from low inflation worldwide, a weaker dollar, and generally prudent monetary policies.[3]

(cont'd.)

Box 1: An improving macroeconomic landscape *(cont'd.)*

Figure 2: Inflation in Africa (2001–06)



Source IMF, 2007.

While much remains to be achieved, the overall sense is one of cautious optimism for the outlook for macroeconomic stability in Africa. Nonetheless, given the potentially temporary nature of the recent increased inflows of aid and the surge in debt relief, it is more urgent than ever for African countries to use the present positive environment to solidify the fiscal and monetary improvements already underway.

1 IMF's *Regional Economic Outlook for Sub-Saharan Africa*, available at http://www.imf.org/external/pubs/ft/reo/2006/ENG/02/sreo0906.pdf.
2 Summary of the OECD's *African Economic Outlook 2005/2006*, available at http://www.oecd.org/dataoecd/55/14/36912403.pdf.
3 From http://www.oecdobserver.org/news/fullstory.php/aid/1618/Africa%92s_economy:_Aid_and_growth_.html.

Box 2: Health and basic education in sub-Saharan Africa: Increasing cause for concern

Health and primary education represents one of the key pillars of competitiveness that, as explained in the text, is particularly important for increasing productivity for countries at earlier stages of development. A healthy workforce is critical to a country's competitiveness. Workers who are ill cannot function to their potential and will be less productive. Poor health significantly increases costs to business, with workers often absent or operating at lower levels of efficiency. In countries strongly affected by the HIV/AIDS pandemic, which primarily affects the working-age population, the result is an additional cost to companies from a shortage of qualified workers brought about by increasing absenteeism and mortality.

Also critical for national competitiveness is the basic literacy of the population, which is increasingly important in today's rapidly evolving economy. Basic education increases the efficiency of each individual worker, making the economy more productive. A workforce that has received little or no formal education can carry out only basic, often manual, work, making the transition to more advanced production processes and techniques more difficult. Lack of basic education can therefore make it difficult for firms and countries to move up the value chain by producing more sophisticated or higher-value-added products.

The data show that, over the past decades, the human resources base—as measured by the health and basic education components of this pillar—has improved substantially in North Africa, as it has also in other developing regions. Sub-Saharan Africa, on the other hand, has been falling increasingly behind the rest of the world in both areas.

With regard to health, while other developing regions have seen significant improvements in recent years, in many countries in sub-Saharan Africa there has been an actual deterioration in the health of the population. This is illustrated by the declining life expectancy of the population overall in the region, as shown by Figure 1. The figure shows that while life expectancy has been increasing significantly since 1990 in Latin America, South Asia, and also North Africa, it has been declining in sub-Saharan Africa to an average of just 46 years in 2004, due primarily to the HIV/AIDS pandemic that is ravaging the region. The rate of HIV/AIDS infection in sub-Saharan Africa has increased greatly over the past decades, much faster than in other regions, peaking in the late 1990s and leveling off at an extremely high level.[1] And this is also the case with other communicable diseases, the rates of which have been shown to be highly correlated with HIV. As shown in Table 1, tuberculosis rates have decreased significantly over the period in other regions, including North Africa, while more than doubling in sub-Saharan Africa over the same period.

Another important health indicator included in this pillar is the rate of child mortality. Although coming down in sub-Saharan Africa, child mortality has been doing so much more slowly than other regions, as shown in Figure 2. In fact, in 1980 sub-Saharan Africa had a child mortality rate similar to that of South Asia. But given the much more rapid improvements in the latter over the decades, by 2004 South Asia's numbers had improved substantially, approaching rates closer to those in Latin America and North Africa, where North Africa—in an opposite trend from sub-Saharan Africa—saw a significant improvement, falling rapidly enough over the period to match the Latin American rates in 2004.

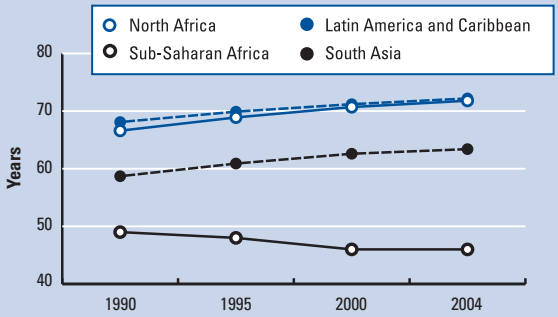
Improving this situation is clearly difficult because most Africans depend on public health services that have inadequate budgets, underinvestment in physical infrastructure, and insufficient numbers of trained health-care providers. Yet the world is

(cont'd.)

Box 2: Health and basic education in sub-Saharan Africa: Increasing cause for concern *(cont'd.)*

not standing by idly. Many international and national initiatives are aimed at improving the health of sub-Saharan Africa's citizens. These take a variety of approaches, such as exploring ways to stem the spread of communicable diseases, encouraging the development of drugs specific to the needs of Africans, increasing the rate of childhood immunization, and so forth.[2] Many regional and national efforts are also underway driven by national governments, NGOs, and regional organizations.

Figure 1: Life expectancy at birth (1990–2004)



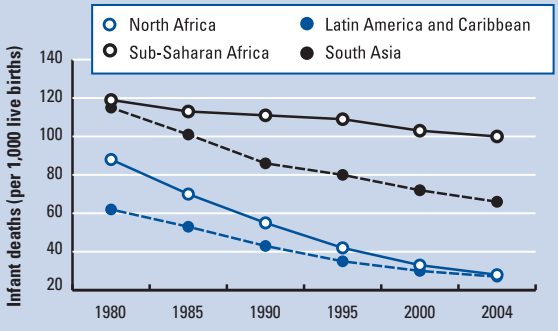
Source : World Bank, *World Development Indicators Online.*

Table 1: Incidence of tuberculosis (per 100,000 people)

Country	1990	2004
North Africa	55.6	46.7
Sub-Saharan Africa	162.1	363.1
Latin America and Caribbean	102.6	63.6
South Asia	179.9	177.2

Source: World Bank, *World Development Indicators Online.*

Figure 2: Child mortality rate in Africa (1980–2004), per 1,000 live births



Source : World Bank, *World Development Indicators Online.*

Another critical aspect of the quality of a country's human resources base is basic education, preparing the population with a minimum of basic skills. As Table 2 shows, primary education enrollment rates have been increasing significantly over the years in all developing regions shown. By 1994 North Africa had attained an average net primary enrollment rate of nearly 94 percent, almost on a par with Latin America, a region known for its push to increase educational attainment in recent years. Importantly, sub-Saharan Africa has also seen an impressive improvement of more than 20 percentage points over the period, rising from 53 percent in 1991 to over 73 percent in 2004. This is an important achievement, yet rates remain significantly lower than in the rest of the world, demonstrating the gap that still remains to be closed.

Table 2: Net primary school enrollment rates

Country	1991	1999	2004
North Africa	83.7	87.3	93.9
Sub-Saharan Africa	53.0	62.6	73.5
Latin America and Caribbean	85.5	92.8	94.7
South Asia	n/a	82.2	87.1

Source: World Bank, *World Development Indicators Online.*

The primary enrollment figures are mirrored by literacy rates, which have risen significantly in all regions since 1990 but less quickly in sub-Saharan Africa, where more than 38 percent of the population are still illiterate, compared with 33 percent in North Africa and less than 10 percent in Latin America. Increasing formal primary enrollment and literacy in the region is a clear priority in improving its productive potential and competitiveness. This will certainly require increased investment in the education system.

Educational spending, while increasing significantly or at least remaining flat in other developing regions, has actually declined in sub-Saharan Africa, falling to 3.7 percent in 2004. In fact, in 1990 sub-Saharan and North Africa spent similarly on education, which then rose significantly in the North, attaining a level comparable to that of France by 2004; during the same period it declined in the South. In the same way, although sub-Saharan Africa spent more on education as a percentage of GNI than both Latin America and South Asia in 1990, by 2004 Latin America was far outspending the region, and South Asia had just about caught up.

In sum, North African countries on average have made great strides in improving the health and basic education of their workforce. Sub-Saharan African countries, on the other hand, while increasing educational attainment and literacy, have on average done so far more slowly than other developing regions, and many countries in the region have experienced a serious deterioration in many indicators related to the health of the population. This is perhaps the region's greatest priority area in improving its competitiveness going forward, a fact that is now clearly recognized by international institutions and national governments. Productivity on the continent simply cannot increase on a sustainable basis until the health and basic education of the population is ensured.

1 Avert (an HIV/AIDS charity). Details available at http://www.avert.org/aafrica.htm.
2 International efforts include the GAVI Alliance; the Bill and Melinda Gates Foundation; and the Global Fund to Fight AIDS, Malaria and Tuberculosis, all of which focus on addressing various aspects of the health problem.

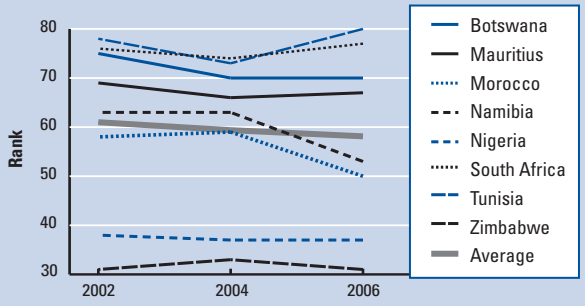
Box 3: The recent evolution of Africa's competitiveness

The Global Competitiveness Index (GCI) in its present form has been calculated only since 2005, and thus does not provide a long-term perspective on the evolution of the Africa's competitiveness landscape. However, the previous Growth Competitiveness Index has been presented in the *Global Competitiveness Reports* since 2001, and thus provides a number of years of comparable results.[1] The Growth Competitiveness Index includes a subset of the factors included in the GCI described in this chapter, focusing on three main issue areas: the quality of a given country's macroeconomic environment, the state of its public institutions, and the level of its technological readiness and innovative capacity. Results from the Index thus provide a sense of how Africa's competitiveness has evolved in these key areas since the beginning of the present decade. As the data show, a number of African countries have not improved their competitiveness over the period.

The majority of the 29 African countries discussed in this chapter have been included in the competitiveness work of the World Economic Forum only for the past few years. However, eight of them have been included since 2002: these are Botswana, Mauritius, Morocco, Namibia, Nigeria, South Africa, Tunisia, and Zimbabwe.[2] An analysis of how their rankings have evolved over the time period allows us to analyze major trends in the competitiveness of each of the economies, using the information accumulated over the six-year period. Figure 1 shows the rankings between 2002 and 2007 of the African countries included in the first year in a constant sample of 79 countries, which makes the ranks comparable across time.[3] We also show the average rank for all eight countries, which provides a sense of the average trend in terms of their competitiveness performance.

The figure shows that the diversity of performances has been quite consistent since the beginning of the decade, with South Africa, Botswana, Tunisia, and Mauritius consistently outperforming the other countries on the continent. As the figure shows, Tunisia has been the strongest performer over most of the period, with South Africa and Botswana are also well assessed —each of the three was ranked first in the region for one of the six years. Overall competitiveness has been somewhat steady or improving in these three countries as well as in Mauritius, the next most competitive of the eight countries assessed.

Figure 1: Growth Competitiveness Index rank for African countries (2002–06)



Source: World Economic Forum, *Global Competitiveness Reports*, various years; author's calculations.

For Namibia and Morocco, however, even in a constant sample competitiveness has been deteriorating to some extent over the period. Nigeria has had a steady performance at a low level. The weakest performer has been Zimbabwe, which has been one of the lowest-ranked countries over all of the years in question.

The figure shows that, on average, the competitiveness performance of the eight countries remained mediocre and flat or slightly deteriorating, not showing an improvement in competitiveness since 2002.

Tables 1, 2, and 3 provide the details driving these overall rankings.

Table 1: Macroeconomic environment pillar for Africa

Country	2002	2003	2004	2005	2006
Botswana	27	28	38	31	33
Mauritius	48	52	44	48	55
Morocco	39	41	41	55	54
Namibia	46	49	55	54	52
Nigeria	69	65	70	61	69
South Africa	37	38	42	27	30
Tunisia	31	30	29	29	24
Zimbabwe	79	79	79	79	79

Source: World Economic Forum, *Global Competitiveness Reports*, various years; author's calculations.

Starting with the macroeconomic environment, as discussed in Box 1, there have been improvements in this area in recent years. On average, excluding Zimbabwe (which was the worst-assessed country in the entire sample of 79 countries across all years), the macroeconomic environment represents the region's greatest competitive strength, with average ranks that are higher than those registered in the areas of institutions and technology. On the other hand, the table shows that since 2002 rankings for most countries have not really improved, or have even declined slightly. This is attributable to the fact that, although the situation has clearly improved in Africa, other countries have done even more in terms of lowering inflation, improving government finances, and such related issues.

The table also shows that the macroeconomic environment is an area in which, as is the case in the overall Index, some countries—such as Botswana, South Africa, and Tunisia—are assessed quite well by international standards, with steady or improving assessments over the period from consistently better fiscal and monetary management, rising revenues from commodity exports, shrinking debt, and much better evaluations by the business community of how the government allocates financial resources.

Namibia and Morocco demonstrate more mixed performances, with deterioration in some areas over the period. On the positive side, inflation has been coming down to quite low levels in both countries as has been the case in many countries of the region, and debt levels are also on a downward trend. Interest rate spreads, while remaining somewhat high, have also been shrinking, indicating greater efficiency in the financial sector. But these positive improvements have not been strong

(cont'd.)

Box 3: The recent evolution of Africa's competitiveness *(cont'd.)*

enough to keep the countries from falling over the period in the rankings, as other countries have improved these areas even more dramatically. Further, budget deficits have remained rather significant, and have actually been growing in the case of Morocco.

The performances of Nigeria and especially Zimbabwe lag far behind the other six countries, with increasing fiscal deficits and debt as well as growing rates of inflation over the period. With regard to perceptions, business leaders in both countries highlight increasing difficulties in obtaining access to credit over the period. And given the fiscal and monetary mismanagement exhibited in Zimbabwe over the period, it is perhaps not surprising that the country's business leaders have been the most pessimistic out of all 79 countries about its economic outlook every single year since 2002.

To summarize, although the macroeconomic picture has improved on an absolute basis as highlighted by Box 1, on a comparative basis much remains to be achieved given that nations in other parts of the world are making great strides in this area. It is clear that continuing efforts are still required to bring a number of countries in the region up to international standards of macroeconomic stability.

As Table 2 on public institutions shows, there has been a large range in performances throughout the period. Countries such as Botswana, South Africa, and Tunisia have consistently been rated as having higher-level quality institutions than other countries on the continent, with measurable improvements in South Africa and Tunisia over the period. These countries ensure stronger property rights, greater judicial independence, higher general levels of government efficiency, and lower levels of corruption than many other countries.

Table 2. Public institutions pillar for Africa

Country	2002	2003	2004	2005	2006
Botswana	31	24	34	32	34
Mauritius	35	40	57	46	36
Morocco	56	60	37	65	57
Namibia	41	44	35	48	48
Nigeria	78	77	74	71	77
South Africa	34	39	30	40	32
Tunisia	24	30	31	33	29
Zimbabwe	68	74	62	61	76

Source: World Economic Forum, *Global Competitiveness Reports*, various years; author's calculations.

Again, the performances of Morocco and Namibia are more mixed and on a downward trend. While aspects such as the protection of property rights have received improving assessments over the period in these countries, their rankings in this area have gone down. This is primarily linked to improvements in other countries rather than a measured deterioration in the quality of institutions in these two countries. However, there are a few areas of concern. In Morocco business leaders complain about increasing government favoritism. In Namibia there is a perception of increasing levels of corruption and organized crime in the economy.

Mirroring the overall competitiveness rankings shown above, Nigeria and Zimbabwe have consistently had poor ratings on the quality of their public institutions. Business leaders in both countries have increasingly complained about the high corruption and lack of independence of the judiciary in meting out justice—in Zimbabwe in particular there has been a measured deterioration in these two areas. Nigeria has also been plagued by high levels of organized crime. Most strikingly, the confidence in property rights in Zimbabwe has deteriorated so significantly over the period as to place the country last on this indicator in 2006, way down from more reasonable levels in 2002.

The technology index takes into account three components important to economic development: the uptake of ICTs, the extent of innovation in the economy, and technology transfer to the countries.

Table 3 shows that while there are varying performances across the region, four countries: Botswana, Mauritius, South Africa, and Tunisia have been doing comparatively better in harnessing technologies and innovation for development. And although their rankings have remained low, there have also been improvements across different areas in other countries.

Table 3: Technology pillar for Africa

Country	2002	2003	2004	2005	2006
Botswana	61	57	59	65	70
Mauritius	45	47	39	41	49
Morocco	62	66	67	66	65
Namibia	60	60	60	67	67
Nigeria	71	73	73	70	68
South Africa	38	39	36	40	43
Tunisia	59	55	53	52	40
Zimbabwe	75	69	71	74	75

Source: World Economic Forum, *Global Competitiveness Reports*, various years; author's calculations.

A large part of this index looks at the extent to which countries are harnessing the new ICTs. On an absolute basis, the uptake of ICTs has been impressive. For example, over the period the number of mobile phones and Internet users in Botswana more than doubled. In other countries, such as Mauritius and South Africa, mobile phone numbers actually quadrupled, while in Tunisia mobile phones increased more than eightfold. During the same period Morocco saw a nearly tenfold increase in Internet users. These are impressive improvements, demonstrating the important uptake of critical ICTs in the region.

However, it must be noted that in terms of trends most countries actually witnessed a weakening of their rankings over time in this area. The lower and in many cases weakening performances of most countries demonstrates the extent to which the uptake of new technologies, such as personal computers and the Internet, has not kept up with the rest of the world. On a positive note, however, as described in Chapter 1.5, there are many exciting new developments emerging in the area of ICT that are enabling new business opportunities and increasing

(cont'd.)

Box 3: The recent evolution of Africa's competitiveness *(cont'd.)*

productive performance. We would hope to see these trends reflected in the statistics going forward.

Also explicitly taken into account in this index is the extent of technology transfer. Two countries assessed, Tunisia and South Africa, have seen improvements in the harnessing of technologies through FDI and foreign technology licensing in their economies. The other countries have not seen any particular improvements in this area, although they are successful to varying degrees. In a similar vein, except in South Africa and Tunisia and to some extent Morocco, over the period companies have not been perceived as sufficiently aggressive in adopting new technologies and integrating them into their business processes. Since technological adoption is a critical driver of competitiveness for countries at earlier stages of development, improvements in this area remain a priority.

Rates of innovation, measured by factors such as patenting, are also captured by the aggregate numbers shown in the table. This is an area where six of the African countries shown have been lagging significantly behind other regions—with no signs of improvement over the period—with South Africa and Tunisia being the exceptions. Although this is not yet of great concern for most African countries, because they can still enhance their productive potential and competitiveness by addressing the other more basic factors, it should receive increasing focus going forward as they strive to move up the value chain.

Overall the picture in terms of competitiveness levels over the past five years is one of stagnation, or even slightly weakening performance, on average. It is clear that efforts must be made to address the obstacles to competitiveness described in this chapter order to place Africa on a higher sustainable growth path.

1 The Growth Competitiveness Index was developed by Jeffrey Sachs and John MacArthur for the World Economic Forum.
2 Some of these countries, such as South Africa, were already included for several years before 2002. However, that year represents the first one with a critical number of countries, thus allowing for a regional analysis.
3 Eighty countries were assessed in 2002. However, one country—Haiti—was dropped from subsequent editions due to a lack of Survey data in the country and is therefore not included in the constant sample analysis.

where ICTs in particular could be adopted more aggressively. Still, these three countries are ranked well ahead of the next best ranked African country, Mozambique (70th), and most countries from the region fall significantly lower still in the rankings. This is an area, however, where the region has begun to see some striking improvements: see for example Chapter 1.5 of this volume for a discussion of the trends in ICT adoption in Africa.

The sophistication of the business environment and innate innovative potential are not yet very important for the competitiveness of most African countries given their stage of development. However, for those countries approaching stage 3, these factors will become increasingly important in the coming years. This is particularly the case of Mauritius and South Africa, both of which are already in stage 2, as shown in Table 3. As Table 8 shows, with regard to business sophistication, Tunisia and South Africa receive strong assessments (ranked 31st and 32nd), comparing well with countries such as Australia and Chile because of abundant and high-quality local suppliers and relatively sophisticated production processes. They are followed in the ranking by Mauritius (44th) and Egypt (57th), the only other countries in the top half of the ranking. Similarly, in terms of innovation, Tunisia (27th) and South Africa (29th) are assessed as having the two most innovative environments in Africa, on a par with the assessments for Estonia and India for example, with relatively high company spending on R&D, strong collaboration between universities and industry in research, and good intellectual property protection by regional standards. The top half of the ranking also includes Kenya (48th), Nigeria (52nd), Tanzania (56th), and Morocco (61st). In the cases of both business sophistication and innovation, most other countries in the region receive significantly weaker assessments. Although this is not yet the area with the most urgent need for improvement, given that their competitiveness can still be stimulated by improvements in the more basic areas already discussed, it is encouraging to note that there are already a number of successful actors in the region that can provide useful examples going forward.

This section has provided a sense of how Africa's competitiveness compares with that of other developing countries and regions, as well as the comparative performance of the individual countries within each of the nine pillars. The analysis has shown the magnitude of reforms and developments that remain to be achieved on the continent in order to increase competitiveness. At the same time, notable strong performances in the different dimensions of competitiveness provide concrete examples to be followed by other countries on the continent aiming to improve their competitiveness.

The next section will carry out a more detailed country-level analysis. The competitiveness profiles in the back of the *Report* provide detailed information on the country-level performance for each of the African countries assessed in this chapter.

The competitiveness of African countries

As mentioned above, **Tunisia** is the top-ranked country in Africa, ranked 29th overall, a full 17 places ahead of the second-ranked country on the continent, South Africa (46th), and higher than all other comparators in the tables. Tunisia displays comparative strengths across many of the areas measured by the GCI. To begin, the country has public institutions that are assessed as efficient, with low levels of corruption (19th) rather well protected property rights (36th), and an independent judiciary (34th) as well as a strong security environment in the country (20th). In terms of private institutions, corporate ethics also get quite high marks (29th), on a par with countries such as Spain and Portugal.

Tunisia also has a healthy workforce and provides excellent access to primary schooling, particularly by regional standards, with the educational system also getting good marks. Goods markets in the country are characterized by relatively few distortions, with little time required to start a business (12th), and taxation that is not perceived as distortionary (19th), although competition is not as intense as in some other countries (43rd). Labor markets are quite flexible and efficient with relative ease for companies in hiring and firing in the country (32nd), quite strong cooperation in labor-employer relations (29th), and one of the best assessments of the participation of women in the workforce (5th). Given that Tunisia is presently in transition between stages 1 and 2, all of these strengths, measured in the basic requirements and efficiency enhancers subindexes, support the country's strong competitiveness.

Although innovation and business sophistication are not yet considered to be fundamental for Tunisia's competitiveness, the country also demonstrates some strength in this area. For example, Tunisian firms tend to produce products relatively high on the value chain rather than basic products (29th), and intellectual property is quite well protected (31st). However, actual patenting remains quite low (70th), suggesting that there is perhaps untapped innovative potential in the economy.

With regard to competitive weaknesses, although infrastructure as a whole receives a reasonable assessment (37th), there are some areas of concern, most particularly telephone lines (80th). The macroeconomic environment is characterized by deficit spending (-2.8 percent of GDP in 2005) that has led to a substantial buildup of national debt. The national savings rate also remains low, placing the country 50th on this indicator.

With regard to education, although as mentioned above primary enrollment is positively assessed, secondary and tertiary enrollment rates place the country 74th and 61st, respectively. Financial markets are also ranked only as average, particularly for their level of sophistication (60th), local equity market access (70th), and the perceived soundness of banks (66th).

Finally, Tunisia could be harnessing new technologies more effectively for productivity improvements—it is ranked 47th in the area of technological readiness. In particular, laws relating to ICTs are not seen as supporting their proliferation, and in fact, penetration rates of new communication tools (mobile phones, Internet users, personal computers) remain low by international standards.

South Africa, ranked 46th overall, is the second highest ranked country in Africa. It remains the top performer in sub-Saharan Africa, ranking higher than all other comparators in Table 3 except for Tunisia and India. South Africa is sub-Saharan Africa's economic giant, accounting for a third of its GDP despite accounting for only 6 percent of its population.[10] Its strong performance in the Index reflects this. Relative to its overall rank, the country does particularly well in a number of areas typically reserved for rich, innovation-driven economies. Its economic sophistication is reflected in high ranks for property rights (23rd), corporate ethics (30th), and goods (19th), as well as financial market efficiency (27th), business sophistication (32nd), and innovation (29th). South Africa's scientific research institutions are assessed as on a par with Hong Kong's, and the country has a higher rate of patenting than a number of European countries, including Greece, Portugal, and Russia. These combined strengths explain South Africa's position at the top of the regional ranking.

However, South Africa does face a number of obstacles to competitiveness. For example, the country ranks 126th in labor market flexibility, encompassing hiring and firing practices, flexibility of wage determination, and union-employer relations. Flexibility of wage determination in South Africa is also constrained by the short supply of skilled labor. This year's ranking for higher education and training shows a drop to 57th place from 47th last year. Tertiary enrollment of 15 percent places the country 88th overall. Therefore, the implementation of education and training programs that deliver the skills necessary for a modern economy are a key ingredient to boosting economic performance.

Infrastructure represents another challenge. South Africa experienced a drop in ranking for this pillar, from last year's 35th place to 50th place this year, with particular concerns about the quality of the electricity supply that has been increasingly plagued by interruptions (73rd) and the low penetration rate of telephone lines (85th). The government is aware of these challenges and there are a number of efforts underway to address them, with investments planned in the areas of utilities and infrastructure.

Finally, lack of security remains an obstacle to doing business in South Africa. The business costs of crime and violence (116th) and the unreliability of police services to protect from crime (92nd) are highlighted as particular concerns. These are areas that need to be tackled in order to improve the country's competitiveness outlook.

Mauritius is the third most competitive economy in Africa, ranked 58th overall. The country is character-

ized by strong public institutions, with well-protected property rights (29th), reasonable levels of judicial independence (43rd), and a security situation that is very good by regional standards (40th). Private institutions are rated as accountable, with strong auditing and accounting standards (34th) and corporate boards (37th), assessed similar to countries such as Japan, for example.

The country's infrastructure is quite well developed, especially for the region. In particular air transport (38th), ports (33rd), and the electricity supply (37th) are of good quality, and the country has relatively abundant telephone lines (43rd). Financial markets in Mauritius are also highly developed (38th) with relatively abundant capital for business development through a variety of channels such as bank loans (36th) from a sound banking system (38th), as well as by issuing shares on the stock market (36th).

Mauritius also has comparative strengths with regard to business sophistication (ranked 44th overall in this pillar), an area that will become increasingly important for the economy as it moves into the next, innovation-driven stage of development. This includes some control over the international distribution of its products (43rd) and producing products already quite high on the value chain (28th).

On the other hand, Mauritius faces some weaknesses in its macroeconomic environment, with a government budget deficit that places the country 110th out of 128, relatively high inflation, and high interest rates.

With regard to human resources, there are low secondary and tertiary enrollment rates (placing Mauritius 64th and 83rd, respectively), and the educational system does not get particularly good marks for quality (66th). On a positive note, however, firms provide significant on-the-job training to make up for this shortcoming (34th). Beyond the educational weaknesses, labor markets are extremely sticky and inefficient, with stringent hiring and firing laws (118th), wages that are not flexibly determined (122nd), and little relation between productivity and pay. Further, there are some health concerns with regard to the workforce—particularly the high incidence of tuberculosis—which places the country 82nd overall.

Egypt is the second-ranked country in North Africa, at 65th place. Egypt's main strengths can be found in aspects of market efficiency. With regard to goods market efficiency, the country benefits from low taxation, little time required to start a business, and the country's large market size, which allows for economies of scale. Egyptian businesses also have access to a relatively large number of local suppliers (35th) and maintain control over the international distribution of products produced in the economy (31st).

There are also some strengths in aspects of the country's labor markets, such as flexibility in wage determination (7th), a rather close relationship between pay and productivity (31st), and reasonable private-sector employment of women (38th). However, the labor market is clearly fraught with some challenges, such as stringent hiring and firing laws (100th) and a lack of cooperation in relations between labor and employers (78th).

With regard to other weaknesses, Egypt's drop of 12 places is attributable in large part to an extremely sharp decline of 61 places in the macroeconomy pillar, as it struggled with deteriorating government finances (the government deficit amounted to 10.5 percent of GDP in 2005, the second-highest deficit of all countries covered) leading the country to build up debt of over 100 percent of GDP by that year. Inflation has also remained quite high in the country (11.4 percent in 2005), at a time when inflation is generally low around the world, thus placing it 112th.

Higher education and training is another area of weakness, with enrollment rates at all levels that could be improved, an educational system that gets poor marks for quality (106th), and a lack of on-the-job training in the country (84th). This is no doubt related to the lack of technological readiness in the country (80th), with low penetration rates of ICTs such as mobile phones (94th). Innovation in the country also gets quite poor marks (83rd), although this should be of secondary concern given its stage of development, since it can still benefit greatly from getting more of the basics right.

Morocco, ranked 72nd, moved up by four places this year. The assessment of the country's public institutions has improved, especially in the area of security (47th). There have also been some improvements in the quality of the country's infrastructure, although more must be done to bring it up to world standards.

The results also show that Morocco has made progress in improving technological readiness (see Chapter 1.5), with big gains in firm-level technology absorption and in technology transfer through FDI. The country has seen an increase in Internet users and improved innovation since the last competitiveness assessment, in particular through stronger university-industry research collaboration and better protection of intellectual property rights.

Despite the overall positive trend, a number of obstacles remain. Although public institutions have improved, private institutions receive poor marks in areas including corporate ethics (96th), the strength of auditing and accounting standards (88th), and the efficacy of corporate boards in the country (102nd).

Further, despite some improvements, health indicators remain worrisome, including infant mortality (placing the country 91st) and tuberculosis incidence (76th). Further, enrollment rates across all education levels (primary, secondary, and tertiary) remain very low. The human resources base is thus in need of an upgrading across a number of fronts.

There are also some weaknesses with regard to how the country's markets allocate resources. In particular, Morocco's goods markets are characterized by a lack of

local competition (71st) and a prevalence of trade barriers (93rd), although setting up a business seems relatively straightforward (with few procedures and little time required for starting a new business in the country).

Libya is included in the Index for the first time in this *Report*, and is ranked 73rd overall. Libya's strengths can be found in two areas: its security environment and macroeconomic stability in the country. With regard to security, Libya is characterized by low business costs of terrorism (19th), low crime and violence more generally (25th), and extremely low levels of organized crime (10th).

In terms of its macroeconomic climate, Libya comes in at an impressive first out of all the 128 countries in this pillar, due to windfall income from high oil prices in recent years. In 2005 the country had the second-highest government surplus in the world (just behind Kuwait), a negligible government debt ratio of just above 1 percent, low interest rates, and low inflation.

Beyond these two areas of strength, Libya faces a number of obstacles to its competitiveness throughout the other pillars measured by the Index. Most notably the country's infrastructure requires upgrading (100th), primary education enrollment is low (89th), and the educational system receives extremely poor marks for quality (123rd). Markets overall are not assessed as efficient (121st), particularly financial markets (120th) and labor markets (117th). Finally, the country is not harnessing new technologies for productivity improvements (ranked 115th in technological readiness), with little technology entering the country through FDI and low uptake of ICTs.

Algeria is the lowest-ranked country in North Africa, ranked 76th overall. Despite its trailing performance in the region, it is experiencing an encouraging trend. Since last year's assessment, the country has moved up six places as a result of a better assessment of the quality of its public institutions and continuing improvements in its macroeconomic environment. With regard to public institutions, there have been measurable improvements in perceptions of government efficiency (now ranked 46th) and evenhandedness of public officials in their dealings with the public (25th).

Algeria's economy is also characterized by a strong macroeconomic environment (where it is ranked 2nd, just behind Libya) with its increasing revenues from oil and gas sales boosting its performance relative to the government budget balance and debt, while still managing to bring inflation down to very low levels.

However, Algeria continues to face a number of obstacles to its competitiveness: for example, in the area of market efficiency (97th) as well as technological readiness (93rd), both of which are very important for productivity improvements given its stage of development. Furthermore, its low rank of 118 for the perceived business costs of terrorism suggests that security is still considered to be a major problem affecting the business environment, imposing heavy costs that are not conducive to sustained productivity improvements and economic growth.

Botswana has been relatively successful, ranking 83rd—the third best performance in sub-Saharan Africa, after South Africa and Mauritius. The government has succeeded in using its wealth from key natural resources and diamonds to invest in factors setting it on a more sustainable growth path. Among the country's strengths are its reliable and legitimate institutions, ranking a high 19th worldwide for the efficiency of government spending, 27th for public trust of politicians, and 25th for judicial independence. Botswana is known to be one of the countries with the lowest levels of corruption in Africa. Corporate ethics also receive relatively high marks, ranked 41st overall.

The transparency and accountability of public institutions have contributed to a stable macroeconomic environment (41st), with a low government budget deficit and one of the highest national savings rates in the world (although inflation remains a bit high by international standards).

Financial markets are also assessed as developed by regional standards, with a sound banking sector (40th), some access to financing through venture capital (45th), and by issuing shares on the local equity market (59th).

With regard to weaknesses, attainment rates at all levels of the educational ladder remain low by international standards, and the quality of the educational system receives rather poor marks—an area clearly requiring attention. Yet it is clear that the biggest obstacle facing Botswana in its efforts to improve its competitiveness is the health situation in the country. Botswana has the highest HIV prevalence rate of all countries covered, as well as very high malaria and tuberculosis prevalence rates, which has led to one of the lowest life expectancies in the world (only 40 years in 2004). Improving the health and education levels of the workforce are clearly the main priorities for the government at this stage.

Namibia is ranked just behind Botswana, at 88th overall. Namibia also demonstrates a number of clear competitive strengths: for example, the quality of the institutional environment within the country is ranked 49th. Property rights in Namibia are well protected (32nd) and the judiciary is perceived as independent from undue influence (28th). With regard to private institutions, auditing and accounting standards are quite strong (39th) and firms are viewed as demonstrating relatively good ethical behavior (53rd).

The quality of the country's infrastructure is also good by regional standards. In particular, aspects of the transport infrastructure such as the quality of railroads (35th) and ports (30th) are highly rated, although telephone lines remain scarce (94th).

Financial markets are also sophisticated by regional standards (57th), with relatively easy access to loans (45th), a relatively sound banking sector (44th), and

some venture capital available (50th), although raising funds by issuing shares on the local stock market is deemed difficult (89th).

With regard to weaknesses, as in Botswana, health indicators are extremely worrisome, including infant mortality (94th), life expectancy (54 years, placing the country 108th), and high prevalence rates of malaria and tuberculosis, and high prevalence of HIV. Further, educational attainment rates are extremely low, with primary, secondary, and tertiary enrollment rates placing the country 106th, 98th, and 102nd, respectively. The quality of the educational system is assessed as being among the worst of all countries in the Index, ranked 122nd overall. On a positive note, companies are making up for this weakness by providing some on-the-job training to staff (65th).

Namibia's labor markets are not very flexible or efficient, with stringent hiring and firing practices (96th), friction in labor-employer relations (105th), and little relation between pay and productivity. On a positive note, the brain drain from the country (55th) does not seem to be as severe as in many other countries in the region. Goods markets suffer from a number of distortions, such as a long time required for starting a business (95 days, placing the country 113th) and high agricultural policy costs (97th).

Finally, the country could do more to harness new technologies to improve its productivity levels. Companies are not considered sufficiently aggressive in absorbing new technologies (92rd) and Namibia has low penetration rates of new technologies such as mobile phones and the Internet.

Kenya is ranked considerably lower at 97th, the last sub-Saharan African country within the top 100. Kenya is an interesting case because its strengths lie in those areas normally reserved for countries at higher stages of development. For example, Kenya's innovative capacity is ranked an impressive 48th, with good scientific research institutions (31st), high company spending on research and development (34th), relatively strong research collaboration between universities and industry (50th), and some availability of scientists and engineers within the country (57th). Further, in terms of innovative "output," after South Africa, Kenya has the highest rate of patenting in all of Africa.

Supporting this innovative potential is an educational system that—although educating a relatively small proportion of the population compared with most other countries (primary, secondary, and tertiary enrollment rates are ranked 108th, 102nd, and 107th, respectively)—is rated highly for quality (37th) for those who are fortunate enough to attend schools. The economy is also supported by financial markets that are sophisticated by international standards, with relatively easy access to loans (58th) and share issues on the local stock market (43rd).

However, there are a number of basic weaknesses that are eroding at Kenya's overall competitive potential. The country's public institutions are assessed as highly inefficient, plagued by undue influence (95th), general government inefficiency and red tape (104th), and with very high levels of corruption (115th). Similarly, corporate ethics are assessed as lacking among the country's firms (91st). The security situation Kenya is also extremely worrisome, particularly in crime and violence (118th).

As well as the low enrollment rates, workers are subject to a high incidence of illnesses, with weak health indicators and a high prevalence of diseases—particularly tuberculosis, which is the highest of all countries covered and contributes to the low life expectancy of 51 years. Beyond these fundamental institutional and human resource weaknesses, more could also be done to free up goods and labor markets and to harness new technologies.

All of the other countries from sub-Saharan Africa are ranked below 100. While there are of course some nuances to their performances, all of these countries face significant obstacles to improving their competitiveness and productivity levels. Rather than discussing the difficulties facing each of these economies, it is perhaps more useful to mention some of the key competitiveness issues facing some of the larger economies in the region.

Nigeria, Africa's most populous country, is ranked 102nd. It is plagued by weak and deteriorating institutions—including a serious security problem—poor assessments for its infrastructure and basic health and education, and a significant change for the worse in macroeconomic management, all of which have depressed the country's rank down from 83rd in 2005. More generally, weaknesses abound throughout all of the areas measured by the GCI. The rankings show that, despite the country's windfall revenues from record-high oil prices, the large majority of the population remains without access to basic health care and education, and the basis for sustainable growth is not being put into place.

Tanzania and **Uganda**, two of the region's larger economies, have not managed to significantly improve their competitiveness in recent years and are ranked 108th and 116th, respectively. Even relative to these low overall rankings, they do particularly poorly on health and primary education (121st and 126th, respectively) and on higher education and training (115th and 110th, respectively). Although they do better on some of the innovation factors, their failure to make a significant improvement in the basic requirements subindex is likely to continue to dent their economic prospects.

Zimbabwe, a country that showed so much promise until just a few years ago, is ranked among the least competitive economies included in the GCI, at 121st overall. The institutional environment is ranked among the worst of all countries, with a complete absence of

property rights (ranked a rock-bottom 128th), high levels of corruption (122nd), and a lack of even-handedness of the government in its dealings with the public (119th) as well as basic government inefficiency (124th). After a number of years of mismanagement of the public finances and monetary policy, Zimbabwe has sunk to the bottom of all countries covered with regard to macroeconomic stability (ranked 128th), with large deficit spending, a negative national savings rate, and raging hyperinflation that is unparalleled anywhere else in the world today. Zimbabwe's weaknesses abound across the other areas measured by the Index, with weak health indicators, low educational enrollment rates, and very inefficient markets (particularly goods and labor markets). It is clear that for Zimbabwe to get back on track, improved governance affecting all levels of the economy will be necessary to restore confidence in the economy and to rebuild what was once one of Africa's stars.

Conclusions

This chapter has explored the various factors and policies driving the competitiveness and economic performance of African countries, providing a framework for prioritizing areas requiring policy attention and enhanced investment. The discussion has included an analysis of Africa's competitiveness from a global and regional perspective, providing a sense of country-level performances compared with the overall group of 128 economies included in the Global Competitiveness Index (GCI).

Specific comparisons have been made with relevant developing countries and regions, including Latin America, economies of developing Asia, and the four emerging BRIC countries. By placing individual country performances into an international context in this way it has been possible to highlight those areas requiring urgent attention within African countries to increase competitiveness and to better ensure sustained strong economic performance going into the future.

On average, the analysis has shown that the competitiveness of most countries in Africa continues to lag behind the rest of the world and even behind other developing regions across all areas measured by the GCI. The results thus provide a sense of the magnitude of the efforts required in order to raise competitiveness levels.

Although the specific priority areas vary from country to country, there are some common areas of concern. For North African countries, which are already assessed as doing comparatively well in some of the more basic areas measured by the GCI, the focus should be on improving the factors measured in the pillars of the efficiency enhancers subindex: most particularly, technological readiness and improved market efficiency.

In sub-Saharan Africa, efforts are needed on all fronts within most countries. This includes upgrading infrastructure and improvements in the health and education of the workforce, as well as tackling weaknesses in the areas of market efficiency and technological readiness. Indeed, as shown by the results of the GCI, several of the big economies in the region are receiving high scores in the innovation and business sophistication pillars relative to their overall ranking, while neglecting more basic requirements that would help them migrate into a higher stage of development and achieve more sustainable growth.

Although much remains to be achieved, the fact that there are a number of strong performers on the continent in specific areas provides reason for optimism. An analysis of the highest-ranked countries in Africa across the various pillars of national competitiveness has shown that that there are strong individual country performances throughout the continent in areas as diverse as institutional quality, macroeconomic stability, business sophistication, and innovation. These countries can serve as benchmarks for other economies in the region, as points of reference in their efforts to improve their competitiveness.

The relatively positive economic outlook across much of Africa, coupled with the renewed focus and increased attention from several institutions from within the region and beyond, now provide a promising opportunity to make the institutional and structural changes needed to put countries in the region on a more sustainable growth path and to pave the way for a more prosperous African future.

Notes

1 IMF 2007.

2 NEPAD was set up in 2001 as a strategic framework to address "the escalating poverty levels, underdevelopment and the continued marginalisation of Africa" through improvements in the quality of governance and leadership, infrastructure, and regional integration. Specifically, NEPAD aims to find African solutions to the continent's economic woes, spearheaded by Africa's leaders. Key for improvements in Africa's competitiveness is the potential of the African Peer Review Mechanism (APRM), under which countries voluntarily "open their books" to teams of African experts in various spheres who assess and critique the countries' political governance, economic governance, corporate governance, and socioeconomic development. See NEPAD in Brief, available online at http://www.nepad.org/2005/files/inbrief.php.

3 At Gleneagles, under the UK presidency, the G8 governments (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States) made clear commitments to increase aid spending, ensure debt cancellation, and improve the trading environment for developing countries, as well as increase investments in education and health, among other things. Africa will continue to remain high on the G8 agenda under the German presidency, although the focus is likely to shift more toward issues surrounding the investment climate and economic integration, as well as infrastructure and HIV/AIDS.

4 The GCI was developed by Xavier Sala-i-Martin and Elsa Artadi for the World Economic Forum. For more details on the construction of the GCI, see Chapter 1.1 in *The Global Competitiveness Report 2006–2007*.

5 In other words, these are the factors and policies supporting higher levels of productivity and sustainable growth. Technically, the index aims to measure the determinants of "A" in the production function (or similarly, in classical growth equations).

6 Further information on the Executive Opinion Survey can be found in Chapter 3.1 of *The Global Competitiveness Report 2006–2007*, which is available from the World Economic Forum on request. Please send requests to gcp@weforum.org.

7 As explained by Sala-i-Martin and Artadi 2004, "The weights were chosen using a maximum likelihood method of an econometric model that had the growth rate of per capita GDP between 1960 and 2000 as the explanatory variable, and various proxies for basic requirements, efficiency enhancers and innovation factors as independent variables. The regression allowed countries in different stages to have different coefficients. The coefficients that maximized likelihood, then, were 'rounded' and became the weights for each stage."

8 The factor-driven stage includes countries that have GDP per capita below US$2,000. The efficiency-driven stage includes countries with per capita income between US$2,000 and US$9,000. The innovation-driven stage includes countries with GDP per capita higher than US$17,000. Countries between the categories are considered to be in transition, as discussed in the text.

9 All countries that export more than 50 percent of primary exports are considered to be to some extent factor driven. The stage of development for these countries is adjusted downward smoothly depending on the exact primary export share. The higher the primary export share, the stronger the adjustment and the closer the country will move to stage 1. For example, a country that exports 95 percent of primary products and that would be in stage 3 based on the income criteria will be in transition between stage 1 and 2. The income and primary exports criteria are weighted identically. Stages of development are dictated uniquely by income for countries that export less than 50 percent primary products. Countries that export only primary products would automatically fall into the factor-driven stage (stage 1).

10 As measured by purchasing power parity (IMF 2006).

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Appendix A: Composition of the Global Competitiveness Index

This appendix provides details on how the Global Competitiveness Index is constructed.

1st Pillar: Institutions

A. Public Institutions

1. Property Rights
   - Property Rights
2. Ethics and Corruption
   - Diversion of public funds
   - Public trust of politicians
3. Undue Influence
   - Judicial independence
   - Favoritism in decisions of government officials
4. Government inefficiency (red tape, bureaucracy, and waste)
   - Government spending
   - Burden of government regulation
5. Security
   - Business costs of terrorism
   - Reliability of police services
   - Business costs of crime and violence
   - Organized crime

B. Private Institutions

1. Corporate Ethics
   - Ethical behavior of firms
2. Accountability
   - Efficacy of corporate boards
   - Protection of minority shareholders' interests
   - Strength of auditing and accounting standards

2nd Pillar: Infrastructure

- Quality of overall infrastructure
- Quality of overall railroad infrastructure
- Quality of port infrastructure
- Quality of air transport infrastructure
- Quality of electricity supply
- Telephone lines (hard data)

3rd Pillar: Macroeconomy

- Government balance (hard data)
- National savings rate (hard data)
- Inflation (hard data)
- Interest rate spread (hard data)
- Government debt (hard data)
- Real effective exchange rate (hard data)

4th Pillar: Health and primary education

A. Health

- Business impact of malaria
- Business impact of tuberculosis
- Business impact of HIV/AIDS
- Infant mortality (hard data)
- Life expectancy (hard data)
- Tuberculosis incidence (hard data)
- Malaria incidence (hard data)
- HIV prevalence (hard data)

B. Primary education

- Primary enrollment (hard data)

5th Pillar: Higher education and training

A. Quantity of education

- Secondary enrollment ratio (hard data)
- Tertiary enrollment ratio (hard data)

B. Quality of education

- Quality of the educational system
- Quality of math and science education
- Quality of management schools

C. On-the-job training

- Local availability of specialized research and training services
- Extent of staff training

6th Pillar: Market efficiency

A. Good markets: distortions, competition and size

1. Distortions
   - Agricultural policy costs
   - Efficiency of legal framework
   - Extent and effect of taxation
   - Number of procedures required to start a business (hard data)
   - Time required to start a business (hard data)
2. Competition
   - Intensity of local competition
   - Effectiveness of antitrust policy
   - Imports (hard data)
   - Prevalence of trade barriers
   - Prevalence of foreign ownership
3. Size
   - GDP – exports + imports (hard data)
   - Exports (hard data)

B. Labor markets: Flexibility and efficiency

1. Flexibility
   - Hiring and firing practices
   - Flexibility of wage determination
   - Cooperation in labor/employer relations
2. Efficiency
   - Reliance on professional management
   - Pay and productivity
   - Brain drain
   - Private sector employment of women

Appendix A: Composition of the Global Competitiveness Index *(cont'd.)*

C. Financial markets: sophistication and openness
- Financial market sophistication
- Ease of access to loans
- Venture capital availability
- Soundness of banks
- Local equity market access

7th Pillar: Technological readiness
- Technological readiness
- Firm-level technology absorption
- Laws relating to ICT
- FDI and technology transfer
- Mobile telephone subscribers (hard data)
- Internet users (hard data)
- Personal computers (hard data)

8th Pillar: Business sophistication
A. Networks and supporting industries
- Local supplier quantity
- Local supplier quality

B. Sophistication of firms' operations and strategy
- Production process sophistication
- Extent of marketing
- Control of international distribution
- Willingness to delegate authority
- Nature of competitive advantage
- Value chain presence

9th Pillar: Innovation
- Quality of scientific research institutions
- Company spending on research and development
- University/industry research collaboration
- Government procurement of advanced technology products
- Availability of scientists and engineers
- Utility patents (hard data)
- Intellectual property protection
- Capacity for innovation

Appendix B: Technical notes on the construction of the Global Competitiveness Index

Combining hard data and Survey data

The responses to the Executive Opinion Survey referred to as "Survey data," with responses ranging from 1 to 7. The hard data were collected from various sources, described in the Technical Notes and Sources at the end of the *Report*. All of the data used in the calculation of the Competitiveness Index can be found in the Data Tables section of the *Report*. The standard formula for converting each hard data variable to the 1-to-7 scale is:

$$6 \times \frac{(\text{country value} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 1$$

The sample minimum and sample maximum are the lowest and highest values of the overall sample, respectively. For some variables, a higher value indicates a worse outcome. For example, high levels of budget deficits are bad. In this case, we "reverse" the series, by subtracting the newly created variable from 8. In some instances, adjustments were made to account for extreme outliers in the data.

How we treat inflation

Since no consensus yet exists in the literature on the specific threshold at which lower levels of inflation become detrimental, and in order to capture the idea that both high inflation and deflation are detrimental to the economy, inflation enters the model in a U-shaped manner as follows: for values of inflation between 0.5 and 2.9 percent, a country receives the highest possible score of 7. Beyond this range, both inflation and deflation receive negative scores. Scores become more negative as they move away from these values, in a linear fashion.

How we measure the impact of disease

Within the 4th pillar of the Global Competitiveness Index, the impact of a disease on competitiveness depends not only on its incidence, but on how costly this incidence is for business. Therefore, in order to estimate the economic impact of disease, we combine hard data on incidence (on malaria, tuberculosis, and HIV) with Survey questions on the cost of these diseases to business.

To combine these data we first take the ratio of each country's disease prevalence, relative to the highest prevalence in the world. We then multiply the inverse of this ratio (to take into account that low values are "good") with the Survey average. This product is then normalized to a 1-to-7 scale. Note that countries with a zero prevalence rate will always obtain a 7 in the ranking, regardless of what the Survey data says.

How we measure domestic and foreign competition

Within the goods market efficiency subindex of the 6th pillar of the Global Competitiveness Index, the component called *competition* is weighted in a particular fashion: the Survey data provide an indication of the extent to which competition is distorted in both the domestic and the foreign market. However, the relative importance of these distortions depends on the relative size of domestic versus foreign competition. In order to capture this interaction, we create two new variables that indicate this relative importance. Domestic competition is the sum of consumption (C), investment (I), government spending (G), and exports (X), while foreign competition is equal to imports (M). Thus, we assign a weight of $(C + I + G + X)/(C + I + G + X + M)$ to those Survey questions related to local competition, and $M/(C + I + G + X + M)$ to those related to foreign competition.

How we measure market size

Within the goods market efficiency subindex of the 6th pillar of the Global Competitiveness Index, the component called *size* measures the size of the market, to which local firms have access. This has two components: the size of the local market and the foreign market (exports). The local market should be the sum of consumption (C), investment (I), and government spending (G). Although we lack data on these three macro components, we do have data on exports (X), imports (M) and GDP. By definition, $GDP = C + I + G + (X - M)$. Therefore, we compute the local market as $GDP + M - X$.