
Part 1

The Competitiveness Indexes

The Global Competitiveness Index: Identifying the Key Elements of Sustainable Growth

AUGUSTO LOPEZ-CLAROS

LAURA ALTINGER

JENNIFER BLANKE

MARGARETA DRZENIEK

IRENE MIA

at the World Economic Forum

Competitiveness and the global context

A number of processes have contributed to the transformation of the global economy since World War II. The opening of national borders has led to a remarkable expansion of international trade and resulted in important efficiency gains in resource allocation. The collapse of barriers to the flow of goods and services, capital and labor has not always been orderly and has proceeded at different speeds in different parts of the world. But it is now virtually universal in scope. Not only has it emerged as an important driver of global economic growth, but greater openness and stronger links with the world economy have imposed on domestic producers everywhere the valuable discipline of international competition and attracted much needed capital and expertise, thus enhancing the prospects for growth through increased efficiency.

Alongside the quickening pace of global economic integration, there has been a marked acceleration in the pace of technological and scientific progress. Advances in information technology, in particular, have created new opportunities for businesses against the background of an increasingly complex global economy. Reductions in the cost of communication are facilitating the shift of back-room operations to the developing world. The multinational corporation, already operating with a global outlook as regards the location of its markets and the sources of supply, is also operating globally in terms of sources of finance and physical location. With reduced transport costs, location is becoming less important and political and economic stability, a well-trained labor force, and strong institutional underpinnings are emerging as the key drivers of prosperity. These developments are also leading an increasing number of governments around the globe to be more assertive in pursuing competitiveness-enhancing policies.

At the World Economic Forum, we understand national competitiveness as the set of factors, policies and institutions that determine the level of productivity of a country. Raising productivity—meaning making better use of available factors and resources—is the driving force behind the rates of return on investment which, in turn, determine the aggregate growth rates of an economy. Thus, a more competitive economy will be one which will likely grow faster in a medium to long-term perspective.

Our productivity-oriented view of competitiveness also allows us to counter the widespread notion that the aim of competitiveness is improved export performance as measured, for instance, in growing market shares. But while trade no doubt contributes to improving productivity and is thus one of the main drivers of competitiveness, as a mechanism for specialization and gains in efficiency on an international scale, it is, in fact, only a small part of the picture. Indeed, a number of observations can be made when examining the factors that contribute to improve a

country's competitiveness. The first and perhaps most self-evident is that the factors are many and span several different areas. For example, there already exists considerable empirical literature documenting the central importance of macroeconomic stability for economic growth. There are no known cases of countries—at least during the post-war period, when the existence of a system of national accounts and the emergence of national statistics has permitted the development of tracking mechanisms—in which high economic growth on a sustained basis has taken place against the background of runaway inflation or disorderly public finances. In fact, there is overwhelming evidence that in the *absence* of a solid foundation of macroeconomic stability, growth will be anaemic—viz. Argentina—or, at best, volatile—viz. Turkey.

However, there is increasing recognition that a solid foundation of macroeconomic stability *alone* is not sufficient to ensure rapid economic growth. Hernando de Soto made a compelling case for the importance of property rights, insisting that a weak property rights environment discourages investment and creates uncertainties which complicate long-range planning. In developing countries in particular, they hamper the ability of budding entrepreneurs to access the financial system using physical assets as collateral. De Soto (2000) notes that with “houses built on land whose ownership rights are not adequately recorded, unincorporated businesses with undefined liability, industries located where financiers and investors cannot see them...assets cannot readily be turned into capital, cannot be traded outside of narrow local circles where people know and trust each other... and cannot be used as a share against an investment.”¹

Daniel Kaufmann (2005)² and a number of other researchers have shown the central importance of the establishment of an institutional environment characterized by openness and transparency in the management of public resources. Corruption poisons the development process. It leads to resource misallocation as funds are no longer directed toward their most productive ends, but are instead captured for private gain. It undermines the credibility of those who are perceived as being its beneficiaries (e.g., public officials, government ministers, and business leaders) and thus sharply limits their ability to gain public support for economic and other reforms. Work done at the World Bank (Kaufmann, 2003) has shown that the benefits for income per capita associated with improvements in governance are very large—“an estimated 400 percent improvement in per capita income associated with an improvement in governance by one standard deviation.”³

Other elements of the institutional environment are also key. For instance, as with property rights, there is a burgeoning literature and a large body of country-specific experience on the importance of an efficient judicial system. It matters significantly for productivity whether firms

are able to resolve legal disputes through a court system that operates transparently, with reasonable speed, and in which decisions are broadly consistent with the letter of the law, as opposed to a system where legal disputes can last a decade, drain huge financial resources, and deliver outcomes reflecting vested interests. In the latter case firms will face a higher cost structure and lose competitiveness vis-à-vis more fortunate competitors operating in friendlier legal environments. Related to the legal environment is the overall regulatory framework and the burdens it can impose on existing businesses and the discouraging effect it can have on the creation of new ones. The World Bank's *Doing Business* reports have achieved broad international recognition by focusing attention on the regulatory obstacles to new business creation in a large number of countries. Paradoxically, it is in the countries where there is an urgent need to foster private sector development that the obstacles are the most onerous.

Beyond these institutional factors, many others are also known to play a role in enhancing productivity growth. Education and training are emerging as key drivers of competitiveness. As the global economy has become more complex, it has become evident that to compete and maintain a presence in global markets it is essential to boost the human capital endowments of the labor force, whose members must have access to new knowledge, be constantly trained in new processes and in the operation of the latest technologies. As coverage of primary education has expanded rapidly in the developing world, higher education has gained importance. Thus, countries which have invested heavily in creating a well-developed infrastructure for tertiary education have reaped enormous benefits in terms of growth. Education has been a particularly important driver in the development of the capacity for technological innovation, as the experience of Finland, Korea, Taiwan, and Israel clearly shows.⁴

As numerous as these factors may be—see next section for a more detailed description of the Global Competitiveness Index—they will matter differently for different countries, depending on their particular starting conditions or, broadly defined, their institutional endowments, current state of policies, and other factors inherent to their stage of development. Sound public finances may be important everywhere for creating the conditions for productivity growth, but they will be less important in countries with a long history of sound fiscal management. On the other hand a move to better fiscal management in a country known for fiscal indiscipline, such as Argentina, is likely to be beneficial for growth. The notion of the relative importance of these factors being a function of a country's endowments and stage of development is explicitly incorporated in the Global Competitiveness Index.

Finally, the factors themselves will evolve over time, reflecting the rapid pace of change in the global economy. For example, we may look to the growing importance of the latest technologies in enhancing productivity growth through improved processes and management practice, as compared to the early part of the post-war period, when growth in the global economy appears to have been driven mainly by the expansion of resource endowments.

The Global Competitiveness Index

Since 2001, the Forum has been using the Growth Competitiveness Index (Growth CI) developed by Jeffrey Sachs and John McArthur to assess the competitiveness of nations. Although it was cutting edge at the time it was developed, more recent advances in economic research and the rising importance of the international dimension, as well as the increasing diversity of countries covered by the *Report*, call for an adjustment of methodology. The Growth CI, although an elegant attempt to intelligently organize a large number of factors known to affect productivity in a large number of countries, nevertheless, involved some compromises in terms of the choice of such factors. For instance, it did not incorporate any indicators able to capture the efficiency of labor markets, an important shortcoming in the context of discussions about economic reform in Europe, where labor market rigidities are seen as being at the center of the region's lagging growth performance as compared to the United States and Asia. The Lisbon Agenda, intended to turn the EU into the most competitive region in the world by 2010, highlighted the centrality of more efficient labor markets as a precondition for productivity growth.

Surveys of top executives in Africa reveal considerably less concern about macroeconomic stability than they do about the impact of HIV/AIDS and other diseases on the labor forces of these countries. Public health indicators were not present in the Sachs-McArthur framework, suggesting the need to include these increasingly relevant factors of competitiveness, particularly in an African context. The modernization of a country's infrastructure is also seen as an important driver of productivity and growth potential. In India, Latin America, and in many parts of Africa, dilapidated roads and ineffective physical infrastructures are seen as important supply bottlenecks, undermining growth performance. Thus, a more comprehensive measure of national competitiveness should, ideally, include some indicators of the quality of a country's underlying infrastructure.

With the aim of incorporating these and many other factors into a broader measure of competitiveness, Professor Xavier Sala-i-Martin, a leading expert on growth and economic development, has developed a new comprehensive competitiveness model for the World

Economic Forum. This new Global Competitiveness Index (GCI) and a full description of its main methodological underpinnings was first presented in the *Global Competitiveness Report 2004–2005* (Sala-i-Martin and Artadi, 2004). The GCI extends and deepens the concepts and ideas underpinning the earlier Growth Competitiveness Index. In order to build a time series of the results before moving to the new index, a set of scores and rankings was again published in the *Global Competitiveness Report 2005–2006*. With this year's *Report* we complete the move to the Global Competitiveness Index as the main competitiveness indicator to be used by the Forum. For the sake of historical continuity we will continue to present the rankings associated with the Growth CI in an appendix to this *Report*.

As noted above, 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
Infrastructure
Macroeconomy
Health and primary education
Higher education and training
Market efficiency
Technological readiness
Business sophistication
Innovation

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—e.g., 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. Therefore, the most competitive economies in the world will typically be those where concerted efforts have been made to frame policies in a comprehensive way, that is, those which 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.

In the paragraphs that follow we review briefly the importance of each of the above nine pillars.

By **institutions** we mean the system of rules that shapes incentives and defines the way economic agents interact in an economy. The institutional framework has a strong bearing on competitiveness and growth. It plays a central role in the ways societies distribute the benefits and bear the costs of development strategies and policies, and it has a bearing on investment decisions and on the organization of production. However, institutions are more resistant to change in the short term, as institutional reforms often touch on deeply entrenched human behavior. It is of fundamental importance whether governments are accountable to their respective populations. Investors care enormously whether judges and courts are reasonably independent, or whether they are subject to undue influence. Do businesses have to pay bribes to settle their tax obligations or clear goods through customs? Do they have to hire private security details because police services are ineffective and unreliable? Do governments show favoritism in their decisions, or are they fairly even-handed in their relations with the business community, playing more the role of impartial formulators of transparent rules? Are public resources being allocated to public health and education, or spent on wasteful and unproductive projects or schemes?

6

The concept of competitiveness developed by the Forum explicitly incorporates notions of public sector accountability, efficiency, transparency and, more generally, the various ways in which the government interacts with economic agents in the domestic economy, particularly the business sector. The justifications for doing so are varied, sometimes reflecting reasonably well-established findings in empirical research,⁵ sometimes building upon concepts developed in some of the international economic development organizations, whose insights into the importance of these factors often reflect years of valuable on-the-ground experience and observation.

As William Easterly (2005) points out, there are strong indications that differences in institutions explain much of the growth differential between countries, and therefore have an influence upon countries' growth performance well beyond simply getting inflation right or addressing other macroeconomic weaknesses.⁶ More specifically, to assess the effectiveness of public institutions, the GCI uses five criteria:

- respect for property rights
- ethics of government behavior and the prevalence of corruption

- independence of the judiciary and the extent to which the government gives the private sector freedom to operate or engages in interventionist discretionary practices (concepts captured under the heading "undue influence")
- government inefficiency reflected in the waste of public resources and a heavy regulatory burden
- the ability to provide an environment for economic activity characterized by adequate levels of public safety.

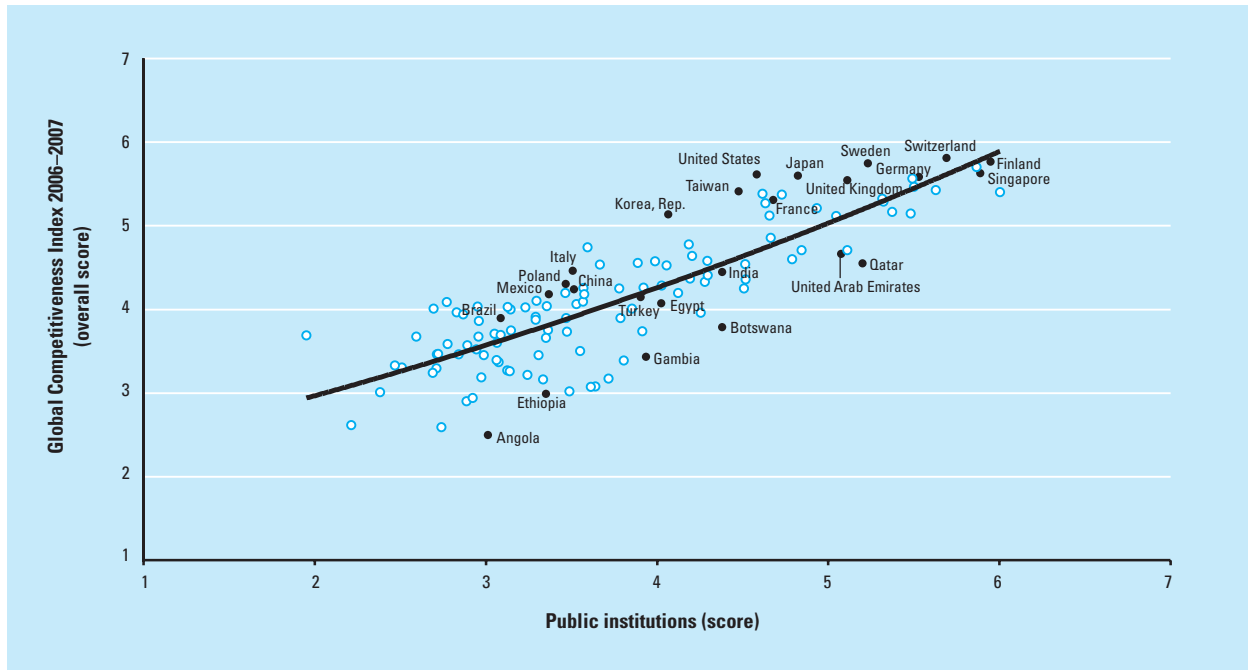
For an interesting and persuasive perspective on the close relationship between competitiveness rankings and the quality of public institutions, see Figure 1.

In addition to public institutions, the index also assesses the quality of private institutions. The large corporate scandals which occurred over the past few years in the United States and other countries have highlighted the relevance of accounting and reporting standards for preventing fraud and mismanagement, and for maintaining investor and consumer confidence. It is of central importance, especially for countries that are most affected by corruption, to enforce those standards strictly, as domestic and international investors are more likely to become engaged if they are confident that they will be able to retrieve their investment and profits earned.

There is a significant body of empirical research—see, for example, Aschauer (1989) and Borensztein et al. (1998)—which has shown that physical **infrastructure** fosters productivity growth and also investment.⁷ Good infrastructure is essential for reducing transport time and communication, and for the efficient distribution of energy supply. A number of empirical studies have found that the different development paths followed by Asia and Africa over the past several decades—with average real per capita growth during the period 1960–2000 in sub-Saharan Africa several times lower than in either East or South Asia—can be partly traced to the dissimilar infrastructure endowments of the two regions and the different priorities which investment in the sector has received in both regions. Weak infrastructure was also perceived as being an important impediment to private sector development in much of Latin America.

Recognizing the key role infrastructure plays in development, the World Bank and many regional development banks have made this a focus of their financial assistance, as resource constraints have often prevented low-income countries from allocating adequate funding to infrastructure development within their respective public investment programs. Increasingly, many countries are bypassing the constraints on publicly available funding by exploring private or joint public-private provision of infrastructure facilities. The GCI focuses on three vital

Figure 1: The Global Competitiveness Index and public institutions



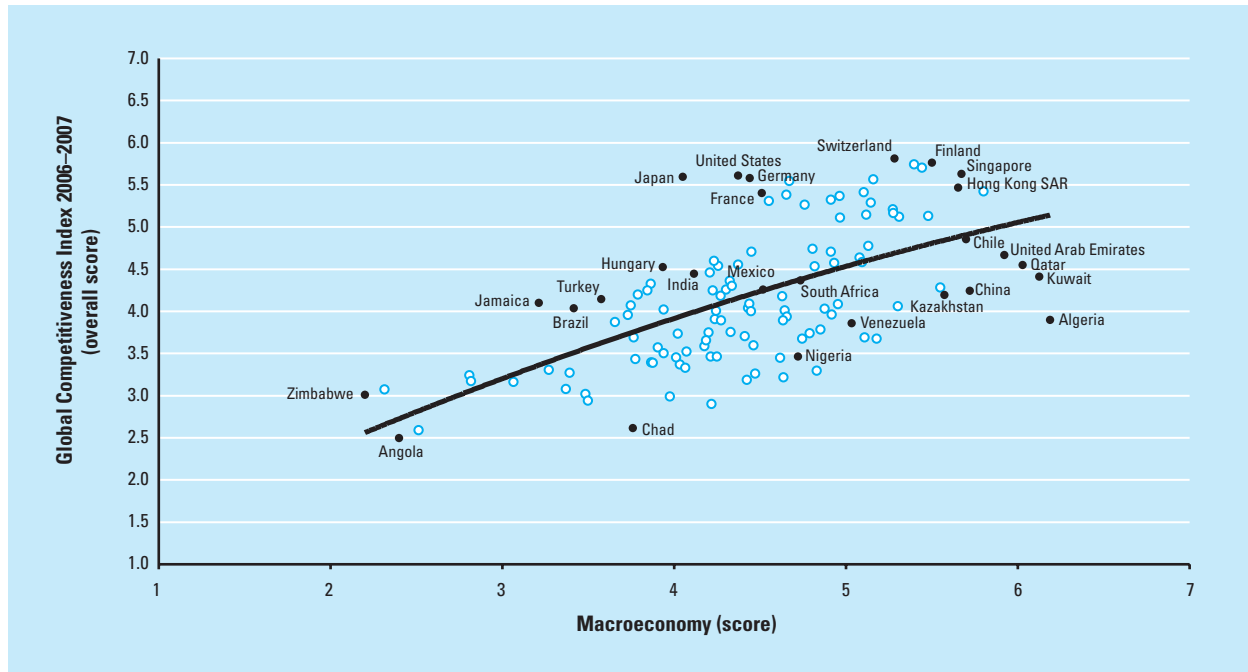
components: energy, transport and telecommunications services, the availability of which will reduce operational costs to business and increase overall efficiency and productivity. It captures these concepts by using data from the Executive Opinion Survey addressing the quality of infrastructure.

The **macroeconomy** pillar groups together a number of distinct variables. As the adverse effects of financial instability—asset price volatility, the creation of a business environment in which it is difficult to plan and invest—have come to be recognized, the notion that macroeconomic stability is an important precondition for sustained growth has been broadly accepted by the policymaking community in country after country. Its theoretical and empirical underpinnings have also been firmly established.⁸ The fact that, with rare exceptions, inflation rates (and, therefore, interest rates) everywhere have been on a sharp, downward trend over the past decade is an excellent indicator of the extent to which central banks have succeeded in persuading governments of the benefits of price stability and, increasingly, central bank independence. Governments have been less successful in reining in public sector deficits and, hence, capping levels of public indebtedness in relation to GDP. But even in this area, progress has been made in switching to non-inflationary forms of finance, in lengthening debt maturities, reducing exchange rate risk by developing domestic currency debt

markets, a process helped by the new emphasis on price stability.

With the possible exception of the Asian financial crisis in 1997–98, virtually all other subsequent emerging market crises have had a fiscal origin, including those in Russia, Brazil, Turkey, and Argentina, to name only a few. Furthermore, lack of adequate fiscal adjustment has also been at the center of policy debates in some of the larger OECD economies, including France, Germany, Japan, Italy, and the United States. In a few countries, notably, the Nordics, Chile, and several countries in Asia, there is also a tendency to begin to frame fiscal policies in a medium-term framework and, as needed, accumulating surpluses now to meet future claims on the budget associated, for instance, with aging populations. Indeed, many countries have adopted fiscal rules which directly constrain the ability of government to link the stance of fiscal policy to political cycles. Beyond fiscal indicators, the macroeconomy pillar also includes a measure of the trade-weighted real effective exchange rate, an important indicator of possible currency overvaluation. The importance of macroeconomic stability notwithstanding, Figure 2 shows the relationship between the overall GCI score and the macroeconomy pillar. The fact that two countries can have broadly similar macro indicators but rather different competitiveness ranks highlights the importance of other factors in explaining the evolution of productivity.

Figure 2: The Global Competitiveness Index and the macroeconomy



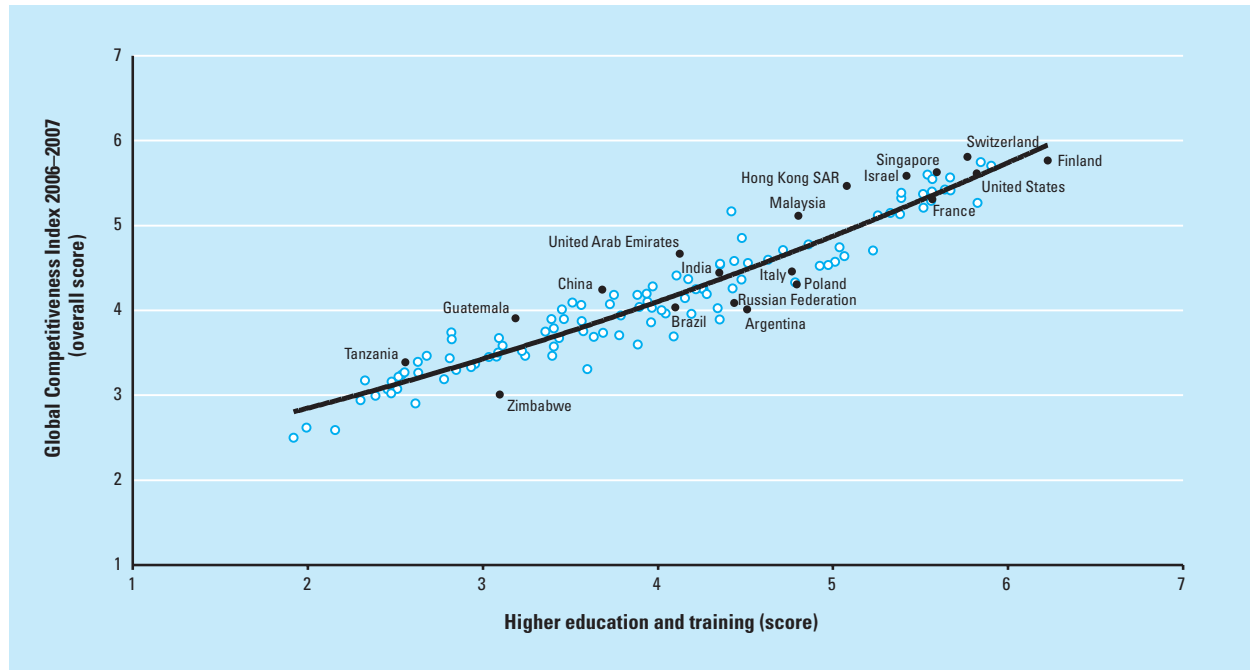
The fourth pillar of the GCI encompasses **health and primary education**, which is of key relevance for competitiveness, especially in developing countries. Clearly, an unhealthy workforce hampers competitiveness and imposes heavy costs on all parts of society. In some African countries, children born in 2003 cannot expect to reach the age of 40 unless health services improve and the spread of infectious diseases such as HIV/AIDS is brought under control. Low life expectancy not only shortens active professional life, but imposes a burden on businesses, which bear the brunt of high rates of absenteeism and the loss of their investment in the costs of training. The provision of health services is thus critical for clear economic, as well as moral, considerations. The report of the WHO Commission for Macroeconomics and Health, for example, estimates that returns to investment in health are of the order of 500 percent (WHO, 2001).

Education is also critical for development and commendable progress has been made in the past 50 years. By 1990 about half of the world's countries had primary enrollment rates of 100 percent as opposed to only 28 percent in 1960. Yet much remains to be done, as illiteracy is still a fact of life in many developing nations. For example, according to UNESCO, almost 40 percent of India's population still cannot read or write. Lack of such basic skills severely limits the possibilities of citizens to participate in the development process, in the activities of civil

society, and professional life. It reduces their employability and, even when they are employed, limits the wages they can obtain, and leads to increased poverty. From a business perspective, without access to workers with a basic education, companies are limited to resource- or basic labor-intensive industries, and constrained in their ability to grow and to move up the value chain.

However, enrollment rates in themselves do not tell the whole story, as they disguise important differences in the quality of education. As Easterly (2002) explains, an artificial focus on administrative targets, such as enrollment rates, has often obscured the importance of the quality of learning, and the role of incentives and motivation of teachers, students and parents. Along these lines, **higher education and training**, the fifth pillar, takes into account the quality of the educational system. This is crucial for economies wanting to move up the value chain beyond simple production processes and products.⁹ In particular, today's globalizing economy requires countries to nurture pools of well educated workers, who are able to adapt rapidly to their changing environment. To capture this concept, this pillar measures secondary and tertiary enrollment rates as well as the quality of education as assessed by the business community. In particular, we take into account the quality of science, math education, and management schools, as well as the availability of specialized training for the workforce. The importance of vocational and

Figure 3: The Global Competitiveness Index and higher education and training



continuous on-the-job training, neglected in many economies, cannot be overstated, as it increases the efficiency and productivity of each worker.¹⁰ Figure 3 shows the relationship between the GCI and the higher education and training pillar.

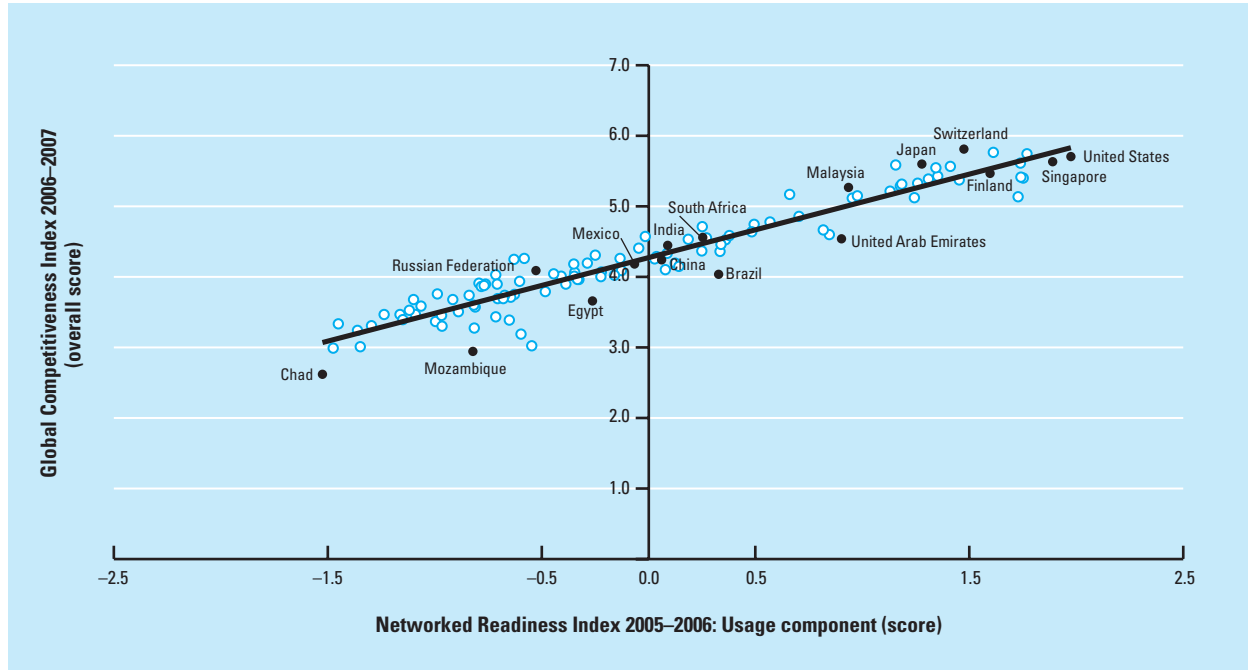
Market efficiency, the sixth pillar, is critical for ensuring that goods, labor, and financial (the three sub-pillars) are allocated in the most productive manner in an economy. There is a vast literature showing the adverse effects of market distortions on the efficient functioning of the economy and the welfare of consumers. In the case of goods markets, the main vehicle for achieving market efficiency is maintaining a healthy level of competition for products and services, while keeping economic distortions to a minimum. We take into account three main components in measuring goods market efficiency. First, we evaluate the openness of markets. By limiting entry and exit barriers, such as state monopolies or state licences, competition forces unproductive firms out of the market, thereby increasing the economy's overall productivity. Second, we assess the level of distortive government intervention in the market, as regulatory instruments should be designed to keep such side-effects to a minimum. Third, we measure the size of the market available to actors in the economy, since the larger the market, the more intense the competition.¹¹ Here we take into account that even for small economies, openness to foreign trade and proactive

integration into the global economy can achieve similar beneficial effects. For example, a desire to reap the benefits of increased market size was one of the main drivers for the establishment of the Single Market in Europe.

In the case of labor markets, efficiency and flexibility are critical for ensuring that workers are allocated to their best use in the economy. This is measured by factors such as cooperation in employer-employee relations, and the flexibility employers have in hiring and firing and in determining the wages of their workers. Also important is the extent to which pay is related to worker productivity, and whether there is equal treatment of women and men in the business environment.

Finally, efficient financial markets ensure that available capital is invested in the most efficient and productive way, providing firms with access to the capital they need to grow their business activity.¹² Here we measure the extent to which sophisticated financial markets make capital available for business investment from such sources as credit from a sound banking sector, well functioning equity markets, or venture capital. We also include an indicator to capture the soundness of the banking sector, given the links between effective financial intermediation and employment and growth. Many of the financial crises of the past decade in some of the largest emerging markets have often involved weaknesses in the financial sector, including deficiencies in the regulatory regime, a limited

Figure 4: The Global Competitiveness Index vs. Networked Readiness Index Usage component



supervisory capacity on the part of the central bank, and delays in the modernization of the legal framework for bankruptcy procedures and creditor rights. A sound financial sector is increasingly perceived as a key ingredient of the institutional infrastructure underlying a growing economy.

The seventh pillar, **technological readiness**, measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. This is a critical because technological differences have been shown to explain much of the variation in productivity between countries. In fact, the relative importance of technology adoption for national competitiveness has been increasing in recent years, as progress in the dissemination of knowledge and the increasing use of information and communications technologies (ICT) have become increasingly widespread. For example, the strong productivity growth recorded in the United States over the past decade has been linked to the high adoption of information technologies, with productivity increases registered particularly in sectors using ICT extensively, such as retail and wholesale.¹³ In this respect, Figure 4, showing the high correlation between competitiveness rankings and a measure of new technology usage in a large number of countries is quite revealing, underscoring the central importance of ICT for productivity.

In order to assess the technological readiness of countries, we measure the availability of ICTs and other technologies in the economy, as well as the aggressiveness of firms in adopting these new technologies. We also note that technology-intensive FDI not only provides strong productivity gains and improvements in business processes, but also has a number of important spillover effects, including improvements in management practice and positive effects on human capital when new technologies provide the incentive for employees to acquire new skills.¹⁴ At the same time, other companies become increasingly aware of the advantages of upgrading technology, with positive repercussions for the productivity of the sector as a whole.

The technological readiness pillar thus complements the innovation pillar, described below, as it aims to gauge the existing technological infrastructure and the ability of a country to absorb technology from home or abroad, while the innovation pillar assesses the economy's ability to produce brand new technologies.

Most of the aspects of competitiveness discussed so far pertain to the environment in which businesses operate. But company performance and productivity also depend greatly on the ability of business leaders to manage their companies efficiently. To capture this key aspect of competitiveness, the eighth pillar assesses the level of **business sophistication** of an economy's enterprises. This

is particularly important for productivity at the top end of the global value chain, and is measured by the quantity and quality of local suppliers, well-developed production processes, and the extent to which companies in a country are turning out the most sophisticated products. A recent study conducted at the London School of Economics has shown that differences in the quality of management among firms explain variations in their productivity.¹⁵

Although the scope for public policy to actively improve business sophistication is somewhat limited, experience has shown that fostering geographic concentration of firms as well as suppliers and service providers active in the same sector (clustering) can significantly improve company performance. Geographical proximity favours horizontal and vertical cooperation between firms, which in turn improves corporate productivity. Productivity gains stem from better access to specialized suppliers of inputs and machines, the availability of appropriately skilled employees, and the development of specialized knowledge.

The ninth pillar, **innovation**, is particularly important for countries that have reached the high-tech frontier, as it is the only self-sustaining driver of growth.¹⁶ While less advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas, for countries that have reached the innovation stage of development, this is no longer sufficient to increase productivity. Firms in these countries must design and develop cutting-edge products and processes to maintain a competitive advantage. This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, this means sufficient business investment in research and development, high-quality scientific research institutions, collaboration in research between universities and industry, and protection of intellectual property.

Given the importance of innovation for long-term growth, innovation policy is currently very much at the center of economic policy in many countries. Overall, there is consensus that simply promoting and supporting large, isolated R&D projects has not proven to be a successful strategy. Instead, cumulative small improvements, along with informal innovation, can have similar growth effects to large R&D projects.¹⁷ These small innovative increments also tend to bring about additional spillover effects, such as complementary innovations, the development of specific skills, and additional investment. Thus, rather than focusing on national champions, innovation policies should aim to foster an environment which promotes entrepreneurship and innovation across the economic spectrum.

Stages of Economic Development

Our sample covers 125 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.

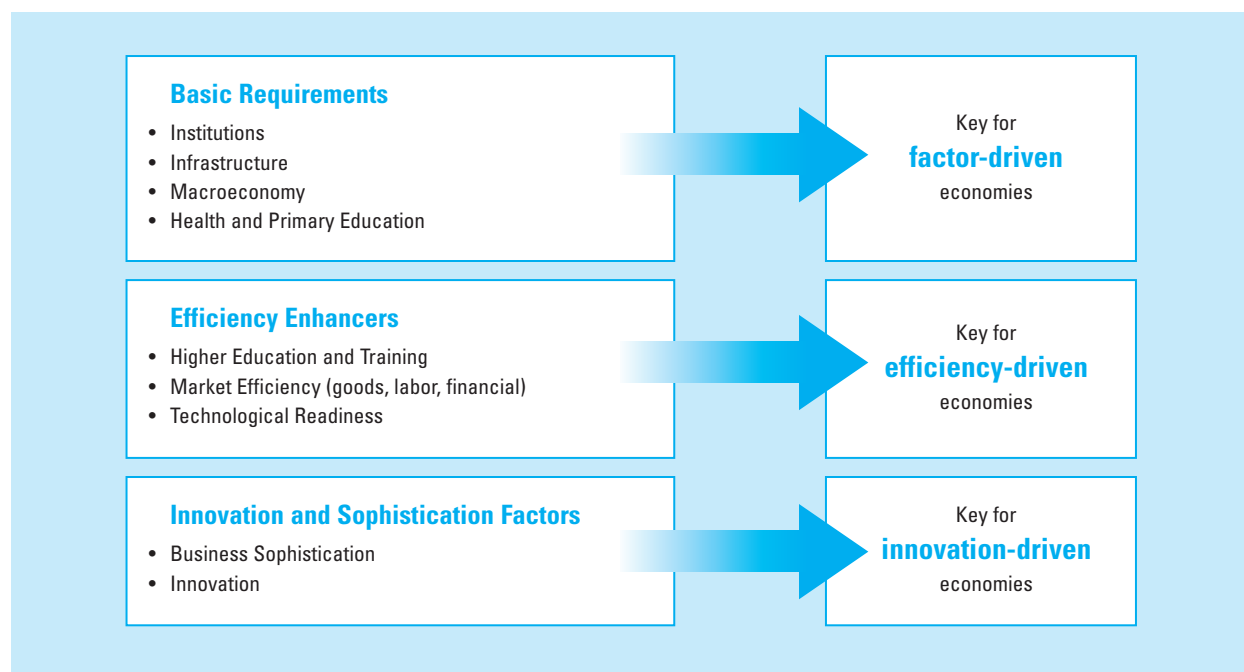
To take this process into account, we have introduced the concept of stages of development into the calculation of the Index. Specifically, we separate countries into three stages, based on the idea that as countries move along the development path, wages tend to increase, and that in order to sustain this higher income, labor productivity must improve. We integrate this concept 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 6), and the ability to harness the benefits of existing technologies (pillar 7).

Finally, as countries move into the *innovation-driven* stage, they are only able to sustain higher wages and the associated standard of living 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 take this into account, the pillars are organized into three subindexes, each critical to a particular stage of

Figure 5. Composition of the three subindexes

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 5.

We implement 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 sub-index in every stage of development are shown in Table 1.

For the calculation of the index, the countries are allocated to stages of development using GDP per capita at market exchange rates. This widely available measure is used as a proxy for wages, as internationally comparable data for the latter is not available for all countries covered. The thresholds for classifying countries into stages are shown in Table 2.

As the table shows, countries falling in between the three stages are considered to be “in transition.” 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

Table 1. Weighting of subindexes at each stage of development

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

Table 2. Income thresholds for establishing stages of development

Stage of Development	GDP per capita (in US\$)
Stage 1: Factor-driven	< 2,000
<i>Transition from stage 1 to stage 2</i>	<i>2,000–3,000</i>
Stage 2: efficiency driven stage	3,000–9,000
<i>Transition from stage 2 to stage 3</i>	<i>9,000–17,000</i>
Stage 3: innovation-driven stage	> 17,000

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. The classification of countries into stages of development is shown in Table 3. Appendix A describes the exact composition of the GCI, and Appendix B provides further technical details on its construction.

Table 3. List of countries/economies in each stage of development

Stage 1	Transition from 1 to 2	Stage 2	Transition from 2 to 3	Stage 3
GDP p.c. < US\$2,000	GDP p.c. US\$2,000–US\$3,000	GDP p.c. US\$3,000–US\$9,000	GDP p.c. US\$9,000–US\$17,000	GDP p.c. > US\$17,000
Angola	Albania	Algeria	Bahrain	Australia
Armenia	Bosnia and Herzegovina	Argentina	Barbados	Austria
Azerbaijan	Colombia	Botswana	Czech Republic	Belgium
Bangladesh	Ecuador	Brazil	Estonia	Canada
Benin	El Salvador	Bulgaria	Hungary	Cyprus
Bolivia	Jordan	Chile	Korea	Denmark
Burkina Faso	Macedonia, FYR	Costa Rica	Malta	Finland
Burundi	Namibia	Croatia	Taiwan, China	France
Cambodia	Peru	Dominican Republic	Trinidad and Tobago	Germany
Cameroon	Suriname	Jamaica		Greece
Chad	Thailand	Kazakhstan		Hong Kong SAR
China	Tunisia	Latvia		Iceland
Egypt		Lithuania		Ireland
Ethiopia		Malaysia		Israel
Gambia, The		Mauritius		Italy
Georgia		Mexico		Japan
Guatemala		Panama		Kuwait
Guyana		Poland		Luxembourg
Honduras		Romania		Netherlands
India		Russian Federation		New Zealand
Indonesia		Serbia and Montenegro		Norway
Kenya		Slovak Republic		Portugal
Kyrgyz Republic		South Africa		Qatar
Lesotho		Turkey		Singapore
Madagascar		Uruguay		Slovenia
Malawi		Venezuela		Spain
Mali				Sweden
Mauritania				Switzerland
Moldova				United Arab Emirates
Mongolia				United Kingdom
Morocco				United States
Mozambique				
Nepal				
Nicaragua				
Nigeria				
Pakistan				
Paraguay				
Philippines				
Sri Lanka				
Tajikistan				
Tanzania				
Timor-Leste				
Uganda				
Ukraine				
Vietnam				
Zambia				
Zimbabwe				

Global Competitiveness Index rankings 2006–2007

Table 4: Global Competitiveness Index rankings and 2005–2006 comparisons

Country/Economy	GCI 2006–07 rank	GCI 2006–07 score	GCI 2005–06 rank
Switzerland	1	5.81	4
Finland	2	5.76	2
Sweden	3	5.74	7
Denmark	4	5.70	3
Singapore	5	5.63	5
United States	6	5.61	1
Japan	7	5.60	10
Germany	8	5.58	6
Netherlands	9	5.56	11
United Kingdom	10	5.54	9
Hong Kong SAR	11	5.46	14
Norway	12	5.42	17
Taiwan, China	13	5.41	8
Iceland	14	5.40	16
Israel	15	5.38	23
Canada	16	5.37	13
Austria	17	5.32	15
France	18	5.31	12
Australia	19	5.29	18
Belgium	20	5.27	20
Ireland	21	5.21	21
Luxembourg	22	5.16	24
New Zealand	23	5.15	22
Korea, Rep.	24	5.13	19
Estonia	25	5.12	26
Malaysia	26	5.11	25
Chile	27	4.85	27
Spain	28	4.77	28
Czech Republic	29	4.74	29
Tunisia	30	4.71	37
Barbados	31	4.70	—
United Arab Emirates	32	4.66	32
Slovenia	33	4.64	30
Portugal	34	4.60	31
Thailand	35	4.58	33
Latvia	36	4.57	39
Slovak Republic	37	4.55	36
Qatar	38	4.55	46
Malta	39	4.54	44
Lithuania	40	4.53	34
Hungary	41	4.52	35
Italy	42	4.46	38
India	43	4.44	45
Kuwait	44	4.41	49
South Africa	45	4.36	40
Cyprus	46	4.36	41
Greece	47	4.33	47
Poland	48	4.30	43
Bahrain	49	4.28	50
Indonesia	50	4.26	69
Croatia	51	4.26	64
Jordan	52	4.25	42
Costa Rica	53	4.25	56
China	54	4.24	48
Mauritius	55	4.20	55
Kazakhstan	56	4.19	51
Panama	57	4.18	65
Mexico	58	4.18	59
Turkey	59	4.14	71
Jamaica	60	4.10	63
El Salvador	61	4.09	60
Russian Federation	62	4.08	53
Egypt	63	4.07	52
Azerbaijan	64	4.06	62
Colombia	65	4.04	58
Brazil	66	4.03	57

(cont'd.)

Table 4: Global Competitiveness Index rankings and 2005–2006 comparisons (cont'd.)

Country/Economy	GCI 2006–07 rank	GCI 2006–07 score	GCI 2005–06 rank
Trinidad and Tobago	67	4.03	66
Romania	68	4.02	67
Argentina	69	4.01	54
Morocco	70	4.01	76
Philippines	71	4.00	73
Bulgaria	72	3.96	61
Uruguay	73	3.96	70
Peru	74	3.94	77
Guatemala	75	3.91	95
Algeria	76	3.90	82
Vietnam	77	3.89	74
Ukraine	78	3.89	68
Sri Lanka	79	3.87	80
Macedonia, FYR	80	3.86	75
Botswana	81	3.79	72
Armenia	82	3.75	81
Dominican Republic	83	3.75	91
Namibia	84	3.74	79
Georgia	85	3.73	86
Moldova	86	3.71	89
Serbia and Montenegro	87	3.69	85
Venezuela	88	3.69	84
Bosnia and Herzegovina	89	3.67	88
Ecuador	90	3.67	87
Pakistan	91	3.66	94
Mongolia	92	3.60	90
Honduras	93	3.58	97
Kenya	94	3.57	93
Nicaragua	95	3.52	96
Tajikistan	96	3.50	92
Bolivia	97	3.46	101
Albania	98	3.46	100
Bangladesh	99	3.46	98
Suriname	100	3.45	—
Nigeria	101	3.45	83
Gambia	102	3.43	109
Cambodia	103	3.39	111
Tanzania	104	3.39	105
Benin	105	3.37	106
Paraguay	106	3.33	102
Kyrgyz Republic	107	3.31	104
Cameroon	108	3.30	—
Madagascar	109	3.27	107
Nepal	110	3.26	—
Guyana	111	3.24	108
Lesotho	112	3.22	—
Uganda	113	3.19	103
Mauritania	114	3.17	—
Zambia	115	3.16	—
Burkina Faso	116	3.07	—
Malawi	117	3.07	114
Mali	118	3.02	115
Zimbabwe	119	3.01	110
Ethiopia	120	2.99	116
Mozambique	121	2.94	112
Timor-Leste	122	2.90	113
Chad	123	2.61	117
Burundi	124	2.59	—
Angola	125	2.50	—

Table 5: The Global Competitiveness Index 2006–2007

Country/Economy	SUBINDEXES							
	OVERALL INDEX		Basic requirements		Efficiency enhancers		Innovation factors	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Switzerland	1	5.81	5	6.02	5	5.59	2	5.89
Finland	2	5.76	3	6.10	4	5.60	6	5.65
Sweden	3	5.74	7	5.95	2	5.65	5	5.66
Denmark	4	5.70	1	6.15	6	5.59	7	5.40
Singapore	5	5.63	2	6.13	3	5.63	15	5.11
United States	6	5.61	27	5.41	1	5.66	4	5.75
Japan	7	5.60	19	5.53	16	5.33	1	6.02
Germany	8	5.58	9	5.75	17	5.22	3	5.89
Netherlands	9	5.56	8	5.94	9	5.45	11	5.35
United Kingdom	10	5.54	14	5.67	7	5.59	10	5.36
Hong Kong SAR	11	5.46	4	6.04	11	5.40	18	4.97
Norway	12	5.42	6	5.96	13	5.38	21	4.95
Taiwan, China	13	5.41	21	5.50	14	5.36	9	5.38
Iceland	14	5.40	12	5.70	8	5.47	17	5.00
Israel	15	5.38	29	5.34	12	5.40	8	5.40
Canada	16	5.37	13	5.68	15	5.35	16	5.08
Austria	17	5.32	18	5.58	20	5.16	12	5.28
France	18	5.31	15	5.66	22	5.07	13	5.28
Australia	19	5.29	11	5.72	10	5.43	24	4.66
Belgium	20	5.27	17	5.59	23	5.07	14	5.21
Ireland	21	5.21	23	5.46	18	5.21	19	4.96
Luxembourg	22	5.16	10	5.73	24	5.00	23	4.81
New Zealand	23	5.15	16	5.65	21	5.15	25	4.65
Korea, Rep.	24	5.13	22	5.47	25	5.00	20	4.96
Estonia	25	5.12	30	5.31	19	5.18	32	4.24
Malaysia	26	5.11	24	5.44	26	4.89	22	4.91
Chile	27	4.85	28	5.35	31	4.58	33	4.22
Spain	28	4.77	25	5.42	28	4.62	30	4.34
Czech Republic	29	4.74	42	4.89	27	4.73	27	4.47
Tunisia	30	4.71	31	5.27	42	4.31	28	4.42
Barbados	31	4.70	32	5.24	29	4.60	54	3.78
United Arab Emirates	32	4.66	26	5.41	35	4.55	40	4.08
Slovenia	33	4.64	36	5.17	30	4.58	34	4.18
Portugal	34	4.60	34	5.22	37	4.47	37	4.14
Thailand	35	4.58	38	4.98	43	4.29	36	4.15
Latvia	36	4.57	41	4.90	36	4.48	58	3.74
Slovak Republic	37	4.55	47	4.70	34	4.56	43	3.96
Qatar	38	4.55	20	5.51	39	4.41	55	3.78
Malta	39	4.54	39	4.98	33	4.57	53	3.79
Lithuania	40	4.53	45	4.80	38	4.44	44	3.96
Hungary	41	4.52	52	4.64	32	4.57	39	4.08
Italy	42	4.46	48	4.70	40	4.41	31	4.29
India	43	4.44	60	4.51	41	4.32	26	4.60
Kuwait	44	4.41	33	5.24	45	4.20	46	3.85
South Africa	45	4.36	58	4.58	46	4.19	29	4.35
Cyprus	46	4.36	37	5.03	44	4.27	49	3.81
Greece	47	4.33	40	4.96	47	4.18	45	3.89
Poland	48	4.30	57	4.59	48	4.17	51	3.80
Bahrain	49	4.28	35	5.18	49	4.15	77	3.47
Indonesia	50	4.26	68	4.41	50	4.12	41	4.07
Croatia	51	4.26	55	4.60	52	4.07	50	3.81
Jordan	52	4.25	50	4.66	58	3.92	61	3.65
Costa Rica	53	4.25	64	4.48	51	4.08	35	4.16
China	54	4.24	44	4.80	71	3.66	57	3.75
Mauritius	55	4.20	49	4.70	61	3.86	47	3.84
Kazakhstan	56	4.19	51	4.64	56	3.97	74	3.51
Panama	57	4.18	46	4.72	62	3.86	62	3.64
Mexico	58	4.18	53	4.61	59	3.91	52	3.80
Turkey	59	4.14	72	4.34	54	4.02	42	3.96
Jamaica	60	4.10	79	4.24	53	4.06	56	3.77
El Salvador	61	4.09	54	4.60	68	3.70	75	3.51
Russian Federation	62	4.08	66	4.43	60	3.91	71	3.55
Egypt	63	4.07	59	4.52	74	3.61	65	3.63
Azerbaijan	64	4.06	56	4.59	78	3.52	70	3.59
Colombia	65	4.04	73	4.34	65	3.82	48	3.82
Brazil	66	4.03	87	4.14	57	3.94	38	4.09
Trinidad and Tobago	67	4.03	63	4.49	64	3.82	63	3.63
Romania	68	4.02	83	4.19	55	3.99	73	3.52
Argentina	69	4.01	67	4.42	66	3.79	79	3.44
Morocco	70	4.01	65	4.44	75	3.58	72	3.54

(cont'd.)

Table 5: The Global Competitiveness Index 2006–2007 (cont'd.)

Country/Economy	OVERALL INDEX		SUBINDEXES					
			Basic requirements		Efficiency enhancers		Innovation factors	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Philippines	71	4.00	84	4.19	63	3.85	66	3.63
Bulgaria	72	3.96	62	4.50	70	3.67	85	3.26
Uruguay	73	3.96	61	4.51	73	3.63	80	3.41
Peru	74	3.94	76	4.28	67	3.70	68	3.61
Guatemala	75	3.91	75	4.32	82	3.46	64	3.63
Algeria	76	3.90	43	4.88	92	3.24	90	3.22
Vietnam	77	3.89	71	4.37	83	3.45	81	3.32
Ukraine	78	3.89	86	4.15	69	3.68	78	3.47
Sri Lanka	79	3.87	80	4.22	79	3.51	67	3.61
Macedonia, FYR	80	3.86	70	4.37	80	3.47	87	3.24
Botswana	81	3.79	77	4.27	77	3.52	95	3.15
Armenia	82	3.75	81	4.21	88	3.33	93	3.17
Dominican Republic	83	3.75	89	4.09	76	3.58	91	3.22
Namibia	84	3.74	69	4.40	90	3.28	86	3.25
Georgia	85	3.73	82	4.20	87	3.36	113	2.86
Moldova	86	3.71	88	4.09	85	3.38	98	3.09
Serbia and Montenegro	87	3.69	99	3.87	72	3.63	83	3.27
Venezuela	88	3.69	85	4.19	84	3.40	96	3.14
Bosnia and Herzegovina	89	3.67	78	4.24	93	3.22	99	3.08
Ecuador	90	3.67	74	4.34	96	3.13	97	3.14
Pakistan	91	3.66	93	3.96	91	3.27	60	3.66
Mongolia	92	3.60	97	3.91	86	3.37	110	2.92
Honduras	93	3.58	90	4.07	100	3.10	100	3.07
Kenya	94	3.57	107	3.62	81	3.47	59	3.73
Nicaragua	95	3.52	95	3.93	95	3.15	107	2.94
Tajikistan	96	3.50	94	3.94	103	3.07	103	3.02
Bolivia	97	3.46	98	3.89	97	3.13	119	2.64
Albania	98	3.46	92	3.98	99	3.12	121	2.57
Bangladesh	99	3.46	96	3.92	108	3.01	104	3.01
Suriname	100	3.45	91	4.06	107	3.01	114	2.86
Nigeria	101	3.45	112	3.53	89	3.31	69	3.60
Gambia	102	3.43	101	3.82	101	3.09	112	2.89
Cambodia	103	3.39	100	3.83	110	2.94	102	3.05
Tanzania	104	3.39	111	3.54	94	3.16	76	3.49
Benin	105	3.37	104	3.68	105	3.02	88	3.23
Paraguay	106	3.33	102	3.81	115	2.89	117	2.68
Kyrgyz Republic	107	3.31	109	3.56	102	3.08	108	2.93
Cameroon	108	3.30	105	3.66	113	2.90	101	3.05
Madagascar	109	3.27	110	3.56	112	2.92	89	3.23
Nepal	110	3.26	106	3.65	117	2.87	111	2.90
Guyana	111	3.24	108	3.58	114	2.89	106	2.95
Lesotho	112	3.22	103	3.68	119	2.80	120	2.59
Uganda	113	3.19	118	3.22	98	3.12	82	3.30
Mauritania	114	3.17	114	3.40	111	2.94	105	2.98
Zambia	115	3.16	113	3.43	106	3.01	124	2.43
Burkina Faso	116	3.07	121	3.13	109	2.95	84	3.27
Malawi	117	3.07	117	3.26	116	2.87	109	2.93
Mali	118	3.02	120	3.14	118	2.83	94	3.17
Zimbabwe	119	3.01	122	2.96	104	3.02	92	3.18
Ethiopia	120	2.99	115	3.29	120	2.68	116	2.72
Mozambique	121	2.94	119	3.21	121	2.62	115	2.86
Timor-Leste	122	2.90	116	3.27	122	2.57	125	2.36
Chad	123	2.61	123	2.84	125	2.35	122	2.53
Burundi	124	2.59	124	2.68	124	2.46	118	2.66
Angola	125	2.50	125	2.48	123	2.51	123	2.52

Table 6: Global Competitiveness Index: Basic requirements

Country/Economy	Basic requirements		1. Institutions		2. Infrastructure		3. Macroeconomy		4. Health and primary education	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	92	3.98	108	3.09	121	1.92	83	4.21	34	6.68
Algeria	43	4.88	58	3.87	78	2.91	1	6.19	45	6.56
Angola	125	2.48	111	3.02	113	2.07	123	2.40	125	2.45
Argentina	67	4.42	112	2.98	72	3.26	51	4.64	23	6.78
Armenia	81	4.21	84	3.44	92	2.66	71	4.33	62	6.40
Australia	11	5.72	11	5.51	18	5.42	23	5.15	21	6.79
Austria	18	5.58	13	5.45	17	5.43	36	4.91	49	6.52
Azerbaijan	56	4.59	72	3.63	56	3.67	17	5.30	96	5.76
Bahrain	35	5.18	45	4.21	40	4.26	11	5.55	30	6.72
Bangladesh	96	3.92	121	2.88	117	2.03	47	4.72	90	6.04
Barbados	32	5.24	23	4.94	28	4.85	61	4.45	28	6.74
Belgium	17	5.59	26	4.85	11	5.85	44	4.76	15	6.89
Benin	104	3.68	90	3.32	114	2.06	92	4.03	101	5.29
Bolivia	98	3.89	118	2.90	107	2.22	77	4.25	81	6.20
Bosnia and Herzegovina	78	4.24	106	3.10	96	2.50	45	4.75	38	6.63
Botswana	77	4.27	37	4.46	66	3.37	39	4.85	112	4.42
Brazil	87	4.14	91	3.29	71	3.29	114	3.42	47	6.54
Bulgaria	62	4.50	109	3.07	65	3.41	35	4.92	39	6.61
Burkina Faso	121	3.13	62	3.78	110	2.14	116	3.37	124	3.24
Burundi	124	2.68	113	2.97	123	1.71	122	2.51	120	3.50
Cambodia	100	3.83	95	3.26	97	2.48	101	3.87	98	5.71
Cameroon	105	3.66	117	2.91	120	1.93	40	4.83	104	4.96
Canada	13	5.68	21	5.01	13	5.81	32	4.96	2	6.95
Chad	123	2.84	124	2.44	125	1.43	107	3.76	119	3.74
Chile	28	5.35	25	4.88	35	4.41	7	5.70	57	6.43
China	44	4.80	80	3.51	60	3.54	6	5.72	55	6.44
Colombia	73	4.34	68	3.70	75	3.15	65	4.43	88	6.07
Costa Rica	64	4.48	55	3.97	73	3.22	81	4.23	52	6.49
Croatia	55	4.60	66	3.72	51	3.98	73	4.30	67	6.38
Cyprus	37	5.03	35	4.52	34	4.47	72	4.33	22	6.79
Czech Republic	42	4.89	60	3.84	33	4.50	42	4.81	58	6.42
Denmark	1	6.15	2	5.98	5	6.24	14	5.44	4	6.94
Dominican Republic	89	4.09	93	3.26	80	2.86	85	4.20	89	6.04
Ecuador	74	4.34	116	2.92	94	2.65	21	5.18	41	6.59
Egypt	59	4.52	48	4.12	55	3.72	108	3.75	50	6.51
El Salvador	54	4.60	61	3.80	54	3.75	64	4.44	60	6.41
Estonia	30	5.31	30	4.70	30	4.66	16	5.31	43	6.58
Ethiopia	115	3.29	83	3.45	102	2.34	95	3.98	121	3.39
Finland	3	6.10	1	6.05	10	5.91	12	5.50	7	6.93
France	15	5.66	24	4.91	4	6.25	56	4.55	12	6.92
Gambia	101	3.82	54	4.02	95	2.62	105	3.77	107	4.85
Georgia	82	4.20	78	3.51	79	2.87	93	4.02	61	6.40
Germany	9	5.75	7	5.69	1	6.51	63	4.44	71	6.37
Greece	40	4.96	41	4.36	29	4.71	102	3.86	11	6.92
Guatemala	75	4.32	81	3.49	74	3.20	79	4.24	73	6.34
Guyana	108	3.58	115	2.93	104	2.27	121	2.81	75	6.31
Honduras	90	4.07	110	3.03	81	2.86	87	4.18	80	6.22
Hong Kong SAR	4	6.04	10	5.54	3	6.29	9	5.65	35	6.67
Hungary	52	4.64	46	4.18	48	4.05	98	3.94	66	6.39
Iceland	12	5.70	3	5.98	20	5.39	58	4.51	3	6.95
India	60	4.51	34	4.55	62	3.50	88	4.12	93	5.90
Indonesia	68	4.41	52	4.04	89	2.72	57	4.52	72	6.35
Ireland	23	5.46	17	5.15	31	4.61	20	5.27	24	6.78
Israel	29	5.34	29	4.77	24	5.06	50	4.65	17	6.86
Italy	48	4.70	71	3.66	50	4.00	84	4.21	8	6.93
Jamaica	79	4.24	76	3.58	53	3.75	118	3.21	65	6.39
Japan	19	5.53	22	4.97	7	6.11	91	4.05	1	6.98
Jordan	50	4.66	33	4.55	52	3.85	103	3.84	63	6.40
Kazakhstan	51	4.64	75	3.59	68	3.33	10	5.57	86	6.08
Kenya	107	3.62	98	3.22	86	2.75	99	3.91	110	4.59
Korea, Rep.	22	5.47	47	4.18	21	5.38	13	5.48	18	6.85
Kuwait	33	5.24	38	4.39	45	4.12	2	6.13	76	6.30
Kyrgyz Republic	109	3.56	123	2.66	103	2.30	117	3.27	91	6.02
Latvia	41	4.90	50	4.07	39	4.33	34	4.93	79	6.27
Lesotho	103	3.68	86	3.40	119	1.99	52	4.64	109	4.69
Lithuania	45	4.80	59	3.86	44	4.14	41	4.82	70	6.37
Luxembourg	10	5.73	14	5.45	15	5.63	19	5.28	46	6.56
Macedonia, FYR	70	4.37	103	3.15	82	2.83	30	5.03	54	6.47
Madagascar	110	3.56	92	3.28	116	2.03	115	3.39	100	5.53
Malawi	117	3.26	63	3.78	115	2.06	124	2.31	106	4.89

(cont'd.)

Table 6: Global Competitiveness Index: Basic requirements (cont'd.)

Country/Economy	Basic requirements		1. Institutions		2. Infrastructure		3. Macroeconomy		4. Health and primary education	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Malaysia	24	5.44	18	5.12	23	5.09	31	4.97	42	6.58
Mali	120	3.14	70	3.66	112	2.09	113	3.48	122	3.34
Malta	39	4.98	31	4.59	37	4.37	76	4.26	32	6.69
Mauritania	114	3.40	64	3.77	111	2.09	120	2.82	105	4.91
Mauritius	49	4.70	44	4.26	42	4.17	104	3.79	44	6.58
Mexico	53	4.61	69	3.68	64	3.41	54	4.63	31	6.71
Moldova	88	4.09	101	3.18	85	2.77	67	4.41	92	6.01
Mongolia	97	3.91	105	3.13	106	2.24	60	4.46	95	5.82
Morocco	65	4.44	57	3.87	59	3.57	78	4.24	87	6.07
Mozambique	119	3.21	107	3.09	99	2.41	112	3.50	117	3.85
Namibia	69	4.40	49	4.07	43	4.15	43	4.79	111	4.58
Nepal	106	3.65	99	3.20	122	1.83	59	4.47	102	5.09
Netherlands	8	5.94	9	5.60	8	6.09	22	5.16	13	6.90
New Zealand	16	5.65	8	5.65	27	4.88	25	5.12	6	6.93
Nicaragua	95	3.93	102	3.15	101	2.34	89	4.07	83	6.16
Nigeria	112	3.53	94	3.26	105	2.26	55	4.62	116	3.98
Norway	6	5.96	6	5.71	19	5.41	5	5.80	10	6.93
Pakistan	93	3.96	79	3.51	67	3.36	86	4.19	108	4.79
Panama	46	4.72	65	3.77	46	4.10	75	4.27	27	6.76
Paraguay	102	3.81	122	2.66	109	2.15	90	4.07	68	6.38
Peru	76	4.28	96	3.25	91	2.69	49	4.66	48	6.53
Philippines	84	4.19	88	3.38	88	2.73	62	4.45	82	6.20
Poland	57	4.59	73	3.62	57	3.64	70	4.34	26	6.76
Portugal	34	5.22	28	4.83	26	4.93	80	4.23	16	6.88
Qatar	20	5.51	16	5.16	41	4.22	3	6.03	37	6.64
Romania	83	4.19	87	3.40	77	3.05	97	3.94	69	6.38
Russian Federation	66	4.43	114	2.97	61	3.52	33	4.95	77	6.29
Serbia and Montenegro	99	3.87	97	3.24	90	2.72	106	3.76	97	5.74
Singapore	2	6.13	4	5.90	6	6.16	8	5.67	20	6.81
Slovak Republic	47	4.70	53	4.03	47	4.08	68	4.37	74	6.31
Slovenia	36	5.17	43	4.27	32	4.51	29	5.08	19	6.83
South Africa	58	4.58	36	4.49	49	4.04	46	4.74	103	5.07
Spain	25	5.42	39	4.37	22	5.22	24	5.13	5	6.94
Sri Lanka	80	4.22	82	3.48	76	3.07	110	3.66	36	6.66
Suriname	91	4.06	89	3.37	100	2.36	94	4.01	51	6.50
Sweden	7	5.95	12	5.51	9	5.97	15	5.40	9	6.93
Switzerland	5	6.02	5	5.73	2	6.34	18	5.28	29	6.72
Taiwan, China	21	5.50	32	4.56	16	5.58	27	5.10	25	6.77
Tajikistan	94	3.94	77	3.53	108	2.20	96	3.94	85	6.09
Tanzania	111	3.54	56	3.88	93	2.65	100	3.88	118	3.76
Thailand	38	4.98	40	4.37	38	4.36	28	5.10	84	6.09
Timor-Leste	116	3.27	119	2.90	124	1.66	82	4.22	114	4.31
Trinidad and Tobago	63	4.49	85	3.41	70	3.29	38	4.88	64	6.39
Tunisia	31	5.27	19	5.09	36	4.39	37	4.91	33	6.69
Turkey	72	4.34	51	4.05	63	3.46	111	3.58	78	6.28
Uganda	118	3.22	100	3.18	118	1.99	66	4.42	123	3.29
Ukraine	86	4.15	104	3.14	69	3.30	74	4.27	94	5.88
United Arab Emirates	26	5.41	20	5.05	25	4.99	4	5.92	99	5.67
United Kingdom	14	5.67	15	5.38	14	5.74	48	4.67	14	6.89
United States	27	5.41	27	4.84	12	5.82	69	4.37	40	6.60
Uruguay	61	4.51	42	4.29	58	3.59	109	3.73	59	6.41
Venezuela	85	4.19	125	2.38	84	2.78	26	5.11	53	6.48
Vietnam	71	4.37	74	3.62	83	2.79	53	4.63	56	6.43
Zambia	113	3.43	67	3.72	87	2.75	119	3.07	115	4.17
Zimbabwe	122	2.96	120	2.88	98	2.44	125	2.20	113	4.32

Table 7: Global Competitiveness Index: Efficiency enhancers

Country/Economy	Efficiency enhancers		5. Higher education and training		6. Market efficiency		7. Technological readiness	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Albania	99	3.12	92	3.24	109	3.55	104	2.56
Algeria	92	3.24	84	3.46	96	3.67	100	2.58
Angola	123	2.51	125	1.92	120	3.35	120	2.26
Argentina	66	3.79	39	4.51	94	3.68	70	3.19
Armenia	88	3.33	80	3.58	104	3.60	86	2.81
Australia	10	5.43	14	5.56	11	5.23	7	5.50
Austria	20	5.16	19	5.39	26	4.94	21	5.15
Azerbaijan	78	3.52	82	3.56	81	3.96	76	3.03
Bahrain	49	4.15	64	3.97	39	4.47	41	4.01
Bangladesh	108	3.01	108	2.68	83	3.93	114	2.41
Barbados	29	4.60	24	5.23	49	4.33	34	4.23
Belgium	23	5.07	4	5.83	32	4.69	27	4.68
Benin	105	3.02	101	2.96	95	3.67	112	2.42
Bolivia	97	3.13	89	3.40	111	3.53	111	2.46
Bosnia and Herzegovina	93	3.22	86	3.44	93	3.69	108	2.52
Botswana	77	3.52	87	3.41	59	4.20	80	2.95
Brazil	57	3.94	60	4.10	58	4.21	57	3.50
Bulgaria	70	3.67	62	4.05	90	3.75	68	3.21
Burkina Faso	109	2.95	116	2.51	87	3.78	103	2.56
Burundi	124	2.46	123	2.16	123	3.28	125	1.96
Cambodia	110	2.94	110	2.63	99	3.63	105	2.56
Cameroon	113	2.90	103	2.85	115	3.45	113	2.41
Canada	15	5.35	17	5.51	7	5.26	17	5.28
Chad	125	2.35	124	1.99	124	3.07	124	1.99
Chile	31	4.58	40	4.48	24	5.04	35	4.22
China	71	3.66	77	3.68	56	4.22	75	3.07
Colombia	65	3.82	69	3.89	51	4.32	65	3.24
Costa Rica	51	4.08	52	4.26	52	4.25	44	3.74
Croatia	52	4.07	44	4.43	68	4.11	47	3.68
Cyprus	44	4.27	41	4.48	55	4.22	38	4.10
Czech Republic	27	4.73	27	5.04	41	4.43	26	4.74
Denmark	6	5.59	2	5.91	6	5.40	10	5.46
Dominican Republic	76	3.58	91	3.36	82	3.95	58	3.42
Ecuador	96	3.13	97	3.09	112	3.51	88	2.79
Egypt	74	3.61	75	3.73	65	4.14	79	2.97
El Salvador	68	3.70	83	3.51	50	4.32	64	3.27
Estonia	19	5.18	23	5.26	25	4.98	16	5.29
Ethiopia	120	2.68	120	2.39	118	3.40	121	2.26
Finland	4	5.60	1	6.23	17	5.13	12	5.44
France	22	5.07	12	5.57	28	4.83	25	4.81
Gambia	101	3.09	106	2.81	89	3.77	92	2.69
Georgia	87	3.36	76	3.69	86	3.86	106	2.54
Germany	17	5.22	18	5.42	20	5.09	20	5.16
Greece	47	4.18	34	4.78	62	4.17	50	3.58
Guatemala	82	3.46	94	3.19	77	4.03	71	3.17
Guyana	114	2.89	114	2.54	106	3.56	101	2.57
Honduras	100	3.10	95	3.11	107	3.56	95	2.63
Hong Kong SAR	11	5.40	25	5.08	1	5.69	13	5.44
Hungary	32	4.57	30	4.93	37	4.61	36	4.18
Iceland	8	5.47	13	5.57	8	5.25	4	5.60
India	41	4.32	49	4.35	21	5.07	55	3.52
Indonesia	50	4.12	53	4.25	27	4.93	72	3.17
Ireland	18	5.21	16	5.52	13	5.22	24	4.89
Israel	12	5.40	20	5.39	14	5.17	3	5.65
Italy	40	4.41	35	4.77	78	4.02	32	4.43
Jamaica	53	4.06	67	3.94	61	4.19	40	4.04
Japan	16	5.33	15	5.54	10	5.23	19	5.21
Jordan	58	3.92	54	4.22	53	4.25	62	3.30
Kazakhstan	56	3.97	51	4.28	44	4.39	66	3.23
Kenya	81	3.47	88	3.41	72	4.10	81	2.91
Korea, Rep.	25	5.00	21	5.38	43	4.39	18	5.22
Kuwait	45	4.20	59	4.11	29	4.80	46	3.70
Kyrgyz Republic	102	3.08	79	3.60	114	3.48	122	2.16
Latvia	36	4.48	28	5.01	40	4.44	43	3.98
Lesotho	119	2.80	115	2.52	119	3.40	110	2.48
Lithuania	38	4.44	29	4.97	45	4.35	42	3.99
Luxembourg	24	5.00	45	4.42	18	5.11	9	5.47
Macedonia, FYR	80	3.47	66	3.96	91	3.74	91	2.71

(cont'd.)

Table 7: Global Competitiveness Index: Efficiency enhancers (cont'd.)

Country/Economy	Efficiency enhancers		5. Higher education and training		6. Market efficiency		7. Technological readiness	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Madagascar	112	2.92	113	2.55	103	3.62	99	2.58
Malawi	116	2.87	119	2.46	88	3.77	118	2.37
Malaysia	26	4.89	32	4.80	9	5.24	28	4.64
Mali	118	2.83	118	2.48	102	3.62	117	2.38
Malta	33	4.57	47	4.36	46	4.35	22	5.00
Mauritania	111	2.94	121	2.33	101	3.62	84	2.86
Mauritius	61	3.86	68	3.94	67	4.11	54	3.55
Mexico	59	3.91	71	3.88	48	4.35	56	3.51
Moldova	85	3.38	73	3.78	92	3.73	96	2.62
Mongolia	86	3.37	70	3.89	100	3.62	97	2.60
Morocco	75	3.58	85	3.45	74	4.08	67	3.22
Mozambique	121	2.62	122	2.30	122	3.29	119	2.27
Namibia	90	3.28	105	2.82	79	4.00	78	3.00
Nepal	117	2.87	109	2.63	105	3.58	116	2.39
Netherlands	9	5.45	8	5.67	12	5.23	11	5.45
New Zealand	21	5.15	22	5.33	15	5.17	23	4.94
Nicaragua	95	3.15	93	3.23	98	3.65	98	2.59
Nigeria	89	3.31	100	3.04	70	4.10	87	2.79
Norway	13	5.38	9	5.64	16	5.16	15	5.32
Pakistan	91	3.27	104	2.82	54	4.23	89	2.77
Panama	62	3.86	74	3.75	42	4.41	59	3.41
Paraguay	115	2.89	102	2.93	121	3.33	115	2.40
Peru	67	3.70	72	3.79	66	4.12	69	3.21
Philippines	63	3.85	63	4.02	57	4.21	61	3.32
Poland	48	4.17	33	4.79	64	4.16	51	3.56
Portugal	37	4.47	37	4.63	38	4.61	37	4.18
Qatar	39	4.41	46	4.36	30	4.77	39	4.10
Romania	55	3.99	50	4.34	76	4.03	49	3.59
Russian Federation	60	3.91	43	4.44	60	4.20	74	3.10
Serbia and Montenegro	72	3.63	61	4.09	97	3.66	73	3.16
Singapore	3	5.63	10	5.59	4	5.62	2	5.69
Slovak Republic	34	4.56	38	4.52	34	4.66	30	4.50
Slovenia	30	4.58	26	5.07	63	4.17	29	4.51
South Africa	46	4.19	56	4.17	33	4.67	45	3.72
Spain	28	4.62	31	4.86	36	4.63	33	4.38
Sri Lanka	79	3.51	81	3.56	71	4.10	83	2.87
Suriname	107	3.01	99	3.08	117	3.41	107	2.53
Sweden	2	5.65	3	5.85	19	5.11	1	6.01
Switzerland	5	5.59	6	5.77	5	5.44	5	5.57
Taiwan, China	14	5.36	7	5.67	22	5.07	14	5.32
Tajikistan	103	3.07	98	3.09	108	3.56	102	2.57
Tanzania	94	3.16	112	2.56	75	4.07	82	2.87
Thailand	43	4.29	42	4.44	31	4.76	48	3.67
Timor-Leste	122	2.57	111	2.62	125	2.95	123	2.15
Trinidad and Tobago	64	3.82	65	3.97	69	4.11	60	3.40
Tunisia	42	4.31	36	4.72	35	4.65	53	3.56
Turkey	54	4.02	57	4.15	47	4.35	52	3.56
Uganda	98	3.12	107	2.78	84	3.90	94	2.67
Ukraine	69	3.68	48	4.35	80	3.96	90	2.71
United Arab Emirates	35	4.55	58	4.13	23	5.05	31	4.47
United Kingdom	7	5.59	11	5.57	3	5.63	6	5.56
United States	1	5.66	5	5.82	2	5.67	8	5.49
Uruguay	73	3.63	55	4.19	116	3.42	63	3.27
Venezuela	84	3.40	78	3.63	110	3.53	77	3.02
Vietnam	83	3.45	90	3.39	73	4.10	85	2.85
Zambia	106	3.01	117	2.48	85	3.87	93	2.67
Zimbabwe	104	3.02	96	3.10	113	3.48	109	2.48

Table 8: Global Competitiveness Index: Innovation factors

Country/Economy	Innovation factors		8. Business sophistication		9. Innovation	
	Rank	Score	Rank	Score	Rank	Score
Albania	121	2.57	115	3.10	125	2.04
Algeria	90	3.22	103	3.36	76	3.09
Angola	123	2.52	123	2.74	121	2.30
Argentina	79	3.44	75	3.85	83	3.03
Armenia	93	3.17	104	3.34	84	3.00
Australia	24	4.66	28	4.98	24	4.35
Austria	12	5.28	4	5.91	17	4.65
Azerbaijan	70	3.59	70	3.92	63	3.26
Bahrain	77	3.47	55	4.24	101	2.71
Bangladesh	104	3.01	96	3.42	109	2.59
Barbados	54	3.78	58	4.21	49	3.36
Belgium	14	5.21	12	5.73	16	4.68
Benin	88	3.23	85	3.58	90	2.87
Bolivia	119	2.64	119	2.97	120	2.31
Bosnia and Herzegovina	99	3.08	92	3.47	104	2.68
Botswana	95	3.15	95	3.43	91	2.87
Brazil	38	4.09	38	4.61	38	3.56
Bulgaria	85	3.26	84	3.59	87	2.93
Burkina Faso	84	3.27	98	3.40	69	3.14
Burundi	118	2.66	117	3.01	119	2.32
Cambodia	102	3.05	100	3.37	98	2.72
Cameroon	101	3.05	101	3.37	97	2.73
Canada	16	5.08	18	5.33	13	4.82
Chad	122	2.53	121	2.81	122	2.26
Chile	33	4.22	30	4.88	39	3.56
China	57	3.75	65	4.05	46	3.44
Colombia	48	3.82	48	4.34	57	3.30
Costa Rica	35	4.16	34	4.66	36	3.65
Croatia	50	3.81	61	4.17	45	3.45
Cyprus	49	3.81	50	4.32	55	3.30
Czech Republic	27	4.47	29	4.96	28	3.98
Denmark	7	5.40	9	5.76	10	5.04
Dominican Republic	91	3.22	79	3.72	99	2.72
Ecuador	97	3.14	82	3.63	105	2.65
Egypt	65	3.63	57	4.22	82	3.04
El Salvador	75	3.51	62	4.13	89	2.89
Estonia	32	4.24	35	4.65	30	3.83
Ethiopia	116	2.72	120	2.94	114	2.50
Finland	6	5.65	11	5.74	4	5.56
France	13	5.28	10	5.76	14	4.80
Gambia	112	2.89	106	3.30	115	2.48
Georgia	113	2.86	116	3.02	102	2.71
Germany	3	5.89	1	6.26	5	5.51
Greece	45	3.89	46	4.35	47	3.43
Guatemala	64	3.63	60	4.19	78	3.07
Guyana	106	2.95	97	3.42	116	2.48
Honduras	100	3.07	87	3.53	107	2.61
Hong Kong SAR	18	4.97	13	5.48	22	4.46
Hungary	39	4.08	49	4.34	31	3.82
Iceland	17	5.00	14	5.45	19	4.55
India	26	4.60	25	5.06	26	4.14
Indonesia	41	4.07	42	4.53	37	3.60
Ireland	19	4.96	16	5.39	20	4.54
Israel	8	5.40	17	5.38	7	5.42
Italy	31	4.29	24	5.08	43	3.50
Jamaica	56	3.77	56	4.22	54	3.32
Japan	1	6.02	2	6.14	1	5.90
Jordan	61	3.65	67	4.04	64	3.25
Kazakhstan	74	3.51	72	3.90	70	3.13
Kenya	59	3.73	68	4.04	48	3.42
Korea, Rep.	20	4.96	22	5.20	15	4.71
Kuwait	46	3.85	33	4.66	81	3.04
Kyrgyz Republic	108	2.93	105	3.31	111	2.55
Latvia	58	3.74	54	4.28	66	3.19
Lesotho	120	2.59	122	2.80	117	2.37
Lithuania	44	3.96	41	4.56	50	3.35
Luxembourg	23	4.81	21	5.27	23	4.36
Macedonia, FYR	87	3.24	88	3.50	86	2.98

(cont'd.)

Table 8: Global Competitiveness Index: Innovation factors (cont'd.)

Country/Economy	Innovation factors		8. Business sophistication		9. Innovation	
	Rank	Score	Rank	Score	Rank	Score
Madagascar	89	3.23	99	3.39	77	3.07
Malawi	109	2.93	113	3.16	103	2.70
Malaysia	22	4.91	20	5.29	21	4.53
Mali	94	3.17	107	3.29	80	3.04
Malta	53	3.79	51	4.32	62	3.26
Mauritania	105	2.98	102	3.36	108	2.60
Mauritius	47	3.84	44	4.44	65	3.23
Mexico	52	3.80	52	4.30	58	3.29
Moldova	98	3.09	93	3.46	100	2.72
Mongolia	110	2.92	118	2.98	94	2.86
Morocco	72	3.54	78	3.82	61	3.26
Mozambique	115	2.86	114	3.13	110	2.58
Namibia	86	3.25	83	3.60	88	2.91
Nepal	111	2.90	108	3.26	112	2.54
Netherlands	11	5.35	7	5.80	11	4.90
New Zealand	25	4.65	26	5.06	25	4.23
Nicaragua	107	2.94	109	3.23	106	2.64
Nigeria	69	3.60	74	3.87	52	3.33
Norway	21	4.95	19	5.30	18	4.59
Pakistan	60	3.66	66	4.05	60	3.27
Panama	62	3.64	53	4.29	85	2.99
Paraguay	117	2.68	112	3.16	123	2.20
Peru	68	3.61	47	4.35	92	2.86
Philippines	66	3.63	59	4.20	79	3.05
Poland	51	3.80	63	4.13	44	3.47
Portugal	37	4.14	43	4.47	32	3.81
Qatar	55	3.78	69	4.04	41	3.51
Romania	73	3.52	73	3.89	68	3.14
Russian Federation	71	3.55	77	3.83	59	3.28
Serbia and Montenegro	83	3.27	94	3.44	71	3.11
Singapore	15	5.11	23	5.17	9	5.04
Slovak Republic	43	3.96	45	4.41	42	3.51
Slovenia	34	4.18	36	4.64	34	3.71
South Africa	29	4.35	32	4.79	29	3.92
Spain	30	4.34	27	5.00	35	3.68
Sri Lanka	67	3.61	71	3.90	53	3.32
Suriname	114	2.86	111	3.18	113	2.54
Sweden	5	5.66	5	5.87	6	5.44
Switzerland	2	5.89	3	6.06	3	5.72
Taiwan, China	9	5.38	15	5.45	8	5.31
Tajikistan	103	3.02	110	3.19	95	2.85
Tanzania	76	3.49	81	3.68	56	3.30
Thailand	36	4.15	40	4.57	33	3.74
Timor-Leste	125	2.36	124	2.58	124	2.14
Trinidad and Tobago	63	3.63	64	4.10	67	3.17
Tunisia	28	4.42	31	4.80	27	4.05
Turkey	42	3.96	39	4.58	51	3.35
Uganda	82	3.30	90	3.49	72	3.11
Ukraine	78	3.47	76	3.84	73	3.11
United Arab Emirates	40	4.08	37	4.63	40	3.52
United Kingdom	10	5.36	6	5.82	12	4.89
United States	4	5.75	8	5.78	2	5.72
Uruguay	80	3.41	80	3.71	74	3.10
Venezuela	96	3.14	91	3.48	96	2.80
Vietnam	81	3.32	86	3.55	75	3.10
Zambia	124	2.43	125	2.51	118	2.35
Zimbabwe	92	3.18	89	3.50	93	2.86

EUROPE AND NORTH AMERICA

The rankings from this year's GCI are shown in Tables 4 through 8. **Switzerland** takes the leading position as the world's most competitive economy in 2006–2007, overtaking Finland and Sweden and replacing the United States, which dropped to sixth position.

Switzerland's top ranking reflects a combination of a world class capacity for innovation and the presence of a highly sophisticated business culture. The country has a well-developed infrastructure for scientific research, with close collaboration between the leading research centers and industry. Companies spend generously on research and development. Intellectual property protection is strong and

this has helped spur high levels of technological innovation, as measured by per capita patents registration, for which the country is ranked 6th in the world. Business activity in the country benefits from a well-developed institutional framework, characterized by respect for the rule of law, an efficiently working judicial system and high levels of transparency and accountability within public institutions. Flexible labor markets and excellent infrastructure facilities are two healthy features of the business environment. Steady efforts to improve macroeconomic fundamentals over the past few years, in particular reducing the budget deficit and stabilizing public debt levels are paying off and have boosted the ranking on the macroeconomics pillar from 30 to 18. For Switzerland to retain

Box 1: France: What will it take to be top 10?

The nine pillars of the Global Competitiveness Index (GCI) provide a useful framework to examine the strengths and weaknesses of France's competitiveness landscape. The issue of "top 10 status" in the World Economic Forum's competitiveness rankings is a frequent subtext to the dialogue which the Forum has with policymakers and business leaders. Creating a friendly business environment for private sector activity, relatively free of distortions, with a predictable and transparent regulatory framework and efficient public institutions has rapidly become a "global game." As the costs of communication and transport continue to come down everywhere, creating powerful incentives for corporations to increasingly think of the global economy as a single organic entity, there has emerged a heightened awareness in government and business about the central importance of the "investment climate"—the collection of factors, policies and institutions that will determine the future evolution of income per capita.

Without doubt, France has a number of features which contribute to the creation of an excellent business climate. The country has a superb physical infrastructure, both as regards transport, energy, and communications. Like many high-income countries France has excellent health and primary education indicators, including low infant mortality, high life expectancy, and very good levels of public health. The country has an extremely sophisticated business culture, with very high ranks (mostly top 10) for those factors which capture the quality of business networks and supporting industries and the sophistication of firms' operations and strategy, such as production processes, marketing, international distribution, and product design. Not surprisingly, there are a large number of French companies which have an imposing presence in the global economy.

France also excels in the area of technological innovation, with very good scores in such areas as company spending in research and development, government procurement of advanced technology products, availability of scientists and engineers, and, more generally, a well-developed capacity among French companies to not just obtain technologies by reliance on licensing or imi-

tation but also, in a significant way, by conducting formal research and pioneering their own new products and processes.

Against the above list of very important attributes one must, inevitably, focus on those few areas where France's rankings must improve to push the country to the "top 10" tier, above its current 18th ranking. We focus our attention on four areas: macroeconomic management, public institutions, market efficiency, and higher education.

- *Macroeconomic management.* France's ranking in the macroeconomy pillar of the GCI has improved, from 61 in 2005 to 56 in 2006, reflecting a narrowing of the fiscal deficit, a somewhat lower level of inflation and a relative improvement in the way our index captures the evolution of the trade-weighted real exchange rate. While the *direction* of change is to be welcomed, the fact remains that the *levels* of some of these indicators are not good enough. This is particularly the case as regards the public finances. A public sector deficit of 2.9 percent of GDP in 2005 still leaves France with a rank of 80 among 125 countries. A public debt to GDP ratio of 67.3 percent implies a ranking of 79 overall. The fact is that more and more governments all over the world appear to have been converted to the virtues of fiscal discipline. The Nordic countries are running budget surpluses already for several years running, fully recognizing future claims on the budget associated with population aging and their governments' firm commitment not to fundamentally alter key features of the social contract. The benefits of cautious fiscal management have already been well entrenched in much of Asia. The French government, of course, is moving in the right direction and further fiscal consolidation is expected in 2006, but the GCI is a ranking of *relative* international performance and progress with respect to a country's past does not *necessarily* mean an improvement in relative positions if other countries are also making improvements, often faster.

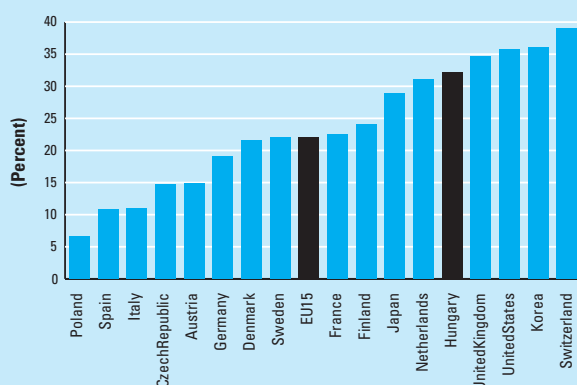
Box 1: France: What will it take to be top 10? (cont'd.)

- Public institutions:** The institutions pillar of the GCI captures a number of difficult-to-quantify factors. The public institutions component, in particular, brings in concepts such as the property rights environment, the operations of the judicial system, perceptions about the efficiency of government spending, the burden of government regulation and the business costs of crime, among others. France's performance in 2006 is broadly stable, a marginal shift in ranks from 24 in 2005 to 25 in 2006, with an unchanged score. There are three areas worth noting which are preventing a higher score in this pillar. First, perceptions in the business community about the wastefulness of government spending are not good (40). EU members in general do not do very well in this indicator, perhaps reflecting the generally dim view taken by the business community of such programs as the Common Agricultural Policy, with all of its associated distortions. France's ranking in this area (88) may also reflect the leading role the government has taken within Europe in protecting agricultural subsidies. Second, it is the perception of the business community that further progress could be made in lightening the regulatory burden: bureaucracy and red tape indicators in France are mediocre and are, without doubt, dragging down France's overall competitiveness ranking. Third, the ethics and corruption subindex in this pillar is not bad (a rank of 27), but it is not at the level of top performers such as Finland, Denmark, and the like. These results are corroborated by the work of other organizations. For instance, Transparency International's Corruptions Perceptions Index ranks France 18 among 145 countries, just behind Germany and the United States, but well behind the Nordics, who have traditionally been at the top.
 - Market efficiency:** France has quite efficient goods markets, reflecting good levels of domestic competition, fairly open markets, a good legal framework—this particular subcomponent of the market efficiency pillar of the GCI shows a rank of 11 worldwide, excellent by international standards. Financial markets are also extremely well developed both as regards the soundness of banks, the level of sophistication of financial institutions and instruments, and so on. Paris is not London as a financial center (the United Kingdom has the best indicators in this area, worldwide), but we would certainly not regard this as an area of weakness. The problem area here concerns various indicators of labor market efficiency and flexibility, where the rankings are very low indeed. Three observations are warranted. First, it is the case that despite some progress made in the past year, unemployment in France during the past decade has remained high in relation to the EU average, leading to proposals by experts to reform employment protection legislation to boost job creation. An important step in this direction was taken in August of 2005, with the introduction of a new employment contract (*le contrat nouvelles embauches*—CNE for short). This is a special contract with a two-year trial period, with termination not subject to the usual administrative procedures applied to open-ended contracts, severance pay based on duration and applying to enterprises with less than 20 employees. The CNE was broadly supported by all the key stakeholders, including parliament and the trade unions, and was initially quite successful in unleashing the creation of hundreds of thousands of jobs and leading to a reduction in the rate of unemployment. Second, the riots which shook France late last year had nothing to do, per se, with the CNE but subsequent demonstrations in the spring of this year were linked to government proposals to introduce—perhaps prematurely—a new employment contract for first-time job seekers of less than 27 years of age and applying to enterprises of any size. France's low ranking in the labor market flexibility and efficiency indicator (99) may indeed reflect an element of disappointment in the business community about the handling of this new initiative. Third, the government remains strongly committed to moving in the direction of addressing remaining weaknesses in the labor market and should be given credit for the efforts made thus far.
 - Higher education:** As in other countries, there is increasing concern in France about the need to upgrade higher education. As argued elsewhere in this chapter, higher education and training—and the various factors captured in the 5th pillar of the GCI—are becoming increasingly important as key drivers of productivity and, hence, competitiveness. Again, as in other countries there are issues of quantity and quality. On quantity: tertiary enrollment rates in France are low by international standards. The latest data available suggest a rate of 56 percent, placing France in 29th place among the 125 countries covered, well behind top performers like Finland, Korea, Sweden, and the United States, where rates range from 90 percent down to 82 percent, although these numbers may also partly reflect differences in the provision of adult education. This raises questions about the adequacy of funding for higher education. According to the World Bank's *World Development Indicators* (2005a), public expenditure per student in percent of GDP per capita for tertiary education in France is 29.3, compared with 37.5 in Finland, 41.2 in Germany, 47.4 in Sweden, and 74.2 in Denmark, although the private sector's financing of parts of the tertiary educational establishment may make up some of this discrepancy. On quality: related to the issue of funding is the question of the overall quality of French universities when compared with their top peers in, say, the United States and the implications this may have in the future for the further development of the country's innovative capacity. There are also issues concerning equitable access to the highest levels of the French educational establishment, for minorities, for the young from regions other than Paris, and so on. These issues will have to be addressed to enhance the returns to investment in higher education in France.
- To summarize: there is no reason why France could not reach “top 10” status within a relatively short time frame. The country's strengths are impressive and are the result of decades of sustained development; they are likely to remain permanent features of the competitiveness landscape. The weaknesses alluded to above are amenable to policy reforms and can, in principle, be quickly addressed, through a combination of broad-based consultation and the political will to act.

Box 2: Hungary: Moving toward an innovation-driven economy

Over the past decade and a half, thanks to early reform efforts, geographic proximity to the large European market, and a well educated workforce (particularly in engineering, science and IT), Hungary has attracted large amounts of foreign direct investment (FDI) and become one of the prime destinations for outsourcing in Europe. FDI attracted the latest technology and helped to develop technology-intensive sectors, which quickly became the main pillar of the Hungarian economy. Today, around 32 percent of Hungary's exports consist of high technology products. This represents a far higher average than the EU15, including some of its more advanced economies, such as Finland or Germany, and, as seen in Figure 1, is well above the shares of some other new EU members such as Poland or the Czech Republic.

Figure 1: Export shares of high-technology industries in selected countries.



Source: OECD.

Building on the sound technological base achieved through imported innovations, Hungary will need to focus on promoting domestic business innovation if it is to remain competitive in an enlarging European Union. Since the onset of the transition process, wage levels in Hungary have been catching up quickly with EU15 countries, moving from efficiency-driven (stage 2) to innovation-driven (stage 3). According to the OECD, hourly earnings increased by 66 percent in Hungary between 2000 and 2005, compared to an increase of only 14.7 percent in the EU15. With Bulgaria and Romania (and soon possibly Croatia, and at some point Turkey) entering the EU, more low-wage locations will be available. As a result, FDI in the highly volatile, labor-intensive industries such as textiles and leather, and the more skill-intensive service industries, such as software development, is likely to move out of countries such as Hungary. Although promotion of R&D and innovation have been on the agenda of policymakers for some time, a number of corollary issues will have to be addressed.

First of all, boosting innovation requires a healthy business environment. Businesses are more likely to invest long-term in

product and process development when the economy is doing well, when there is a growing demand for new products, and when the operational environment is predictable. While Hungary has fairly efficient labor, financial and goods markets,¹ given its level of development, efforts will have to be maintained to improve the efficiency and transparency of institutions, in which the country ranks 46. The most urgent priority, however, lies in realigning macroeconomic policy and in reducing one of the highest fiscal deficits in the EU, namely 7.6 percent of GDP in 2005. These weaknesses are clearly reflected in the low rank the country achieved in the macroeconomy pillar, where it ranks 98 out of 125 countries.

The widening of the fiscal deficit stems from increased social spending before the parliamentary elections of April 2006. As in many other eastern European countries, fiscal indiscipline in Hungary is strongly correlated to the political cycle, a recurring pattern in the Hungarian political and economic landscape.

Although the loosening of fiscal policy probably contributed to the re-election of Prime Minister Ferenc Gyurcsany, it also heightened the presence of significant vulnerabilities. The fiscal deficit has currently reached a level, where, without credible attempts to reverse the deterioration in the public sector accounts, an irregular correction through market forces is probable. The weakening of the *forint* in May 2006 and the downgrading of Hungarian bond ratings earlier this year could be an early sign of this phenomenon. Given that many Hungarian households and corporations have foreign currency liabilities, an abrupt correction of the exchange rate could lead to increased instability in the financial sector. These risks were anticipated by the financial markets which pressured the government to announce fiscal consolidation in May 2006, on the order of 1 percent of GDP, by increasing taxes and reducing spending. It remains to be seen how successful the reduction in spending and the badly-needed restructuring of public services, such as education, healthcare, and government administration will be, as these tasks are both challenging and politically sensitive. Employment in these public service areas must be reduced substantially in order to increase efficiency. In addition, the health care system will need a major overhaul if it is to face additional pressures from an aging population and accommodate new, costly treatments which are likely to be in demand as a result of rising wealth.

Aside from jeopardizing the economic stability of the country, the existence of the large fiscal deficit is likely to delay the adoption of the euro, initially scheduled for 2010. Entering the euro zone would give the country's producers the advantage of reduced currency risk, increased predictability and lower transaction costs in their dealings with the huge EU market. This could considerably boost the productivity of enterprises and the competitiveness of the small and fast-growing Hungarian economy, where the export share of GDP moved from 40 to 68 percent between 1995 and 2005.

Given a favorable business environment, targeted measures aimed at boosting innovation will support the transition to an innovation-driven economy. First of all, domestic innovation will have to be brought to the levels found in industrial economies. A look at the expenditure levels for research and development shows that

Box 2: Hungary: Moving toward an innovation-driven economy? (cont'd.)

Hungarian expenditure on R&D is fairly low by international standards, confirming that the country benefits mainly from imported innovation, reaching only about 0.9 percent of GDP, as compared with the EU15 average of 1.9 percent (in 2004). Moreover, although spending on research and development has increased from 0.7 percent of GDP in 1999 to the current level, most of this increase was accounted for by the government, which is less likely to result in commercially viable innovations. This is confirmed by the results of the Executive Opinion Survey: respondents assess that company spending on R&D is one of the comparative disadvantages, giving the country a low rank of 59.

Over the past few years, in an effort to boost innovation, the government offered a number of financial incentives—i.e., tax relief, grants, and an innovation levy on business. In a recent assessment of Hungary's R&D policy, the OECD pointed to the need for monitoring and evaluating the impact and efficiency of these measures, since conclusions based on economic research have led to skepticism about the impact of some methods as tax breaks (OECD, 2005a). This is particularly important in view of the precarious fiscal situation in the country.

Alongside these measures, the government has also increased funding for public research institutions. In order to use

the funds more efficiently, these institutions will have to develop a more commercial orientation. Although internationally recognized, Hungarian research lacks linkages to industry and therefore contributes little to developing commercially viable innovation. Although some measures to increase the business exposure of researchers have been introduced—such as easing of regulations on university spin-offs and the secondment of researchers to the private sector— incentives for researchers to engage with the private sector are still not strong and budget allocation in state research institutions is not linked to performance. Strengthening consultation between business and public educational institutions about the content of courses would also constitute a step toward increasing the business orientation of research and education.

Note

1 Hungary achieves a rank of 37 in the market efficiency pillar, slightly above its overall rank of 41 in the GCI. It ranks 36th in labor market efficiency, 39th in financial markets, and 37th in goods markets; the particular strengths in this pillar result from healthy levels of competition in goods markets and a high degree of market openness.

its top ranking, it will have to address a number of remaining weaknesses, some of which stand at odds with developments elsewhere in the industrial world. Competition in goods markets is limited by various forms of government intervention; there is resource misallocation through agricultural support,¹⁸ and, at a time when the EU and much of the rest of the world is quickly moving to remove barriers to international trade, Swiss borders remain zealously guarded.

The Scandinavian countries remain among the top performers with **Finland**, **Sweden**, and **Denmark** occupying 2nd to 4th places. They share with Switzerland a broadly similar institutional and structural profile. The Nordic countries have better ranks on the macroeconomy pillar of the GCI, since they are all running budget surpluses and have lower levels of public indebtedness than Switzerland and, indeed, much of the rest of Europe. Finland and Denmark have the best institutions in the world (ranked 1 and 2, respectively) and place in the top ten ranks in health and primary education, compared to Switzerland's rank of 29. These three countries also occupy the top three positions in the higher education and training pillar, where Finland's rank of 1 is remarkable for its durability over time. They lag behind Switzerland in the areas of labor market flexibility and, slightly, in indicators of business sophistication. The Nordic countries show

that transparent institutions and excellent macroeconomic management, coupled with world class educational attainment and a focus on technology and innovation are a successful strategy for maintaining competitiveness in small, highly developed economies.

A comprehensive overview of competitiveness developments in the **United States** is presented in Box 4. Our results match the widely held perception that its competitive position may indeed be weakening. The United States remains a world leader in a number of key categories assessed by the GCI, such as market efficiency, innovation, higher education and training, and business sophistication. However, growing imbalances have dented a number of macroeconomic indicators, and the levels of efficiency and transparency underpinning its public institutions do not match those of the more developed industrial countries.

Overall, the picture in the remaining **European Union** countries remains relatively stable with only a few countries registering significant moves in the rankings. **Germany** and the **United Kingdom** continue to hold privileged positions, ranked 8th and 10th, respectively. There are interesting contrasts in the performance of both economies when looked at through the perspective of the GCI pillars. Both countries have excellent institutional underpinnings, and in some areas (the property rights environment and quality of the judicial system), Germany

Box 3: Is Turkey competitive enough for Europe?

Turkey has come a long way from the instability and structural weaknesses which undermined its economy in the 1990s, bringing the country to a serious crisis in 2001, when GDP contracted by almost 8 percent. Indeed, the tough IMF-backed reforms adopted in the aftermath of the collapse, combining tight fiscal and monetary policies with a broad range of reforms aimed at addressing other deep-seated distortions, seem to have set Turkey on a healthier development path, with GDP growth rates in the 2002–2005 period averaging 7 percent, and inflation rates falling dramatically to single-digit figures. Moreover, the decision by the government to accelerate the onset of accession negotiations with the EU prompted a wave of substantial political and economic reforms to meet key elements of the Copenhagen criteria. This includes the abolition of the death penalty, adoption of a new penal code in May 2005, reduction of the army's role in politics, as well as other measures aimed at better protecting human rights, and establishing a foundation of macroeconomic stability, and implementing regulatory reform essential for successful integration with the rest of Europe.

However, there is no doubt that a number of shortcomings remain to be addressed, both in the economic and political sphere, given the size and composition of Turkey's population—71 million, projected to increase to 80–85 million by 2020, the overwhelming majority Muslim. This, coupled with the country's stage of development—much lower levels of per capita income than in the rest of Europe¹—the central importance of agriculture in the economy, and a range of other problems (e.g., freedom of the press) sometimes give rise to questions about Turkey's capacity to assume the responsibilities of full EU membership. Thus, it is easy to understand why EU accession negotiations could indeed last well over a decade.

An analysis of the Global Competitiveness Index (GCI) results and its various components sheds light on the actual readiness of the country to join the EU. Table 1 shows the ranks and scores for Turkey, other candidate countries (Bulgaria, Romania, and Croatia), and the average of the countries most recently acceded.

The GCI ranking for Turkey at 59, up 12 positions from last year, confirms the pace of the progress made, at the same time clearly highlighting the following areas of concern:

- *Macroeconomic environment:* Last among the countries shown in Table 1, Turkey ranks a dismal 111th in the macroeconomy pillar, reflecting the continued vulnerability of its economy to external shocks. Despite bold reforms undertaken in recent years and a sharp improvement in the management of the public finances in the aftermath of the 2001 crisis, gross public debt levels (72.8 percent of GDP) and the budget deficit (5.9 percent of GDP) are still very high by international standards, severely constraining the ability of the authorities to respond to pressing needs, beyond servicing of the public debt. Indeed, Turkey ranks 86th and 115th, respectively, in these two indicators in 2005. The current account deficit has mushroomed to near 7 percent of GDP, reflecting high oil prices and the strength of the lira. This gap, financed partially by short capital inflows, leaves Turkey prey to the whims of foreign investors, as the recent May 2006 episode of emerging market turmoil eloquently demonstrated. Indeed, the country was hit hard by the investor selling frenzy of 11 May 2006, which targeted emerging market shares. With structural vulnerabilities, high levels of public debt and a burgeoning current account deficit, Turkey is at a disadvantage with respect to other emerging markets which have gone through similar crises of their own in

Table 1: GCI performance of Turkey, recent EU entrants,* and candidate countries

Country/Economy	Global CI		Institutions		Infrastructure		Macroeconomy		Health/primary education		Higher education/training		Market efficiency		Technological readiness		Business sophistication		Innovation	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Estonia	25	5.12	30	4.7	30	4.66	16	5.31	43	6.58	23	5.26	25	4.98	16	5.29	35	4.65	30	3.83
Czech Rep.	29	4.74	60	3.8	33	4.50	42	4.81	58	6.42	27	5.04	41	4.43	26	4.74	29	4.96	28	3.98
Slovenia	33	4.64	43	4.3	32	4.51	29	5.08	19	6.83	26	5.07	63	4.17	29	4.51	36	4.64	34	3.71
<i>Average (new entrants)</i>		<i>4.59</i>		<i>4.17</i>		<i>4.28</i>		<i>4.62</i>		<i>6.54</i>		<i>4.84</i>		<i>4.44</i>		<i>4.38</i>		<i>4.46</i>		<i>3.54</i>
Latvia	36	4.57	50	4.1	39	4.33	34	4.93	79	6.27	28	5.01	40	4.44	43	3.98	54	4.28	66	3.19
Slovak Rep.	37	4.55	53	4	47	4.08	68	4.37	74	6.31	38	4.52	34	4.66	30	4.50	45	4.41	42	3.51
Lithuania	39	4.54	59	3.9	44	4.14	41	4.82	70	6.37	29	4.97	45	4.35	42	3.99	41	4.56	50	3.35
Malta	39	4.54	31	4.6	37	4.37	76	4.26	32	6.69	47	4.36	46	4.35	22	5.00	51	4.32	62	3.26
Hungary	41	4.52	46	4.2	48	4.05	98	3.94	66	6.39	30	4.93	37	4.61	35	4.17	49	4.34	31	3.82
Cyprus	46	4.36	35	4.5	34	4.47	72	4.33	22	6.79	41	4.48	55	4.22	38	4.10	50	4.32	55	3.30
Poland	48	4.30	73	3.6	57	3.64	70	4.34	26	6.76	33	4.79	64	4.16	51	3.56	63	4.13	44	3.47
Croatia	51	4.26	66	3.7	51	3.98	73	4.30	67	6.38	44	4.43	68	4.11	47	3.68	61	4.17	45	3.45
Turkey	59	4.14	51	4.05	63	3.46	111	3.58	78	6.28	57	4.15	47	4.35	52	3.56	39	4.58	51	3.35
Romania	68	4.02	87	3.4	77	3.05	97	3.94	69	6.38	50	4.34	76	4.03	49	3.59	73	3.89	68	3.14
Bulgaria	72	3.95	109	3.1	65	3.41	35	4.92	39	6.61	62	4.05	90	3.75	68	3.21	84	3.59	87	2.93

* Countries that joined the EU in May 2004.

Box 3: Is Turkey competitive enough for Europe? (cont'd.)

recent years—e.g., Russia, Brazil, Argentina, Korea, Thailand, all of them in a much stronger position now.

- **Education:** The disappointing ranks registered for health and primary education (78) and, to a lesser extent, for higher education and training (57) confirm the urgent need to improve the Turkish educational system, which is thought to be “overcrowded, under-funded and uninspiring.”² Despite the Kemalist focus on universal education and the fact that most children do receive at least a primary education—the primary enrolment rate is close to 90 percent—the quality of that education is often inadequate, due to a shortage of teachers and very modest facilities. Moreover, children spend on average only 4.5 years at school as compared to 13 in Germany, and only 27 percent of Turkish children complete secondary education, as compared with 65 percent in the EU. Despite the fact that Turkey shows one of the highest education spending/GDP ratios of the OECD (7 percent), the bulk of these funds come from private sources to compensate for the shortcomings of the public school system. Considering the central role of education in providing Turkey with the qualified human resources needed to upgrade its economy and raise national prosperity, the government should develop a consistent strategy to train more teachers, ensure that girls (especially in rural areas) have equal access, and invest more efficiently in primary and secondary education. This is clearly a priority area for entry into the EU.

On the positive side:

- **Business sophistication:** Turkey achieved a high rank of 39 in the business sophistication pillar of the GCI, particularly for the quality and quantity of networks and supporting industries (33), well above the EU average, and above all except Estonia, the Czech Republic, and Slovenia in Table 1. This strongly suggests that while Turkey does have a large agricultural sector with rather low productivity, both in relation to the agricultural sectors of other recent EU entrants and in relation to other sectors in the Turkish economy, it does have sophisticated industrial and service sectors which are already operating at high levels of efficiency, adopting advanced technologies, efficient production processes, and exploiting economies of scale with respect to their competitors elsewhere in Europe, particularly the new members in central and Eastern Europe.³
- **Innovation and market efficiency:** Turkey is outperforming not only the other candidate countries, but also a few of the EU10 countries in these indicators. In particular, in market efficiency Turkey, at 47, scores only marginally lower than the EU10 average (4.44), but ranks higher than Malta, Cyprus, Slovenia, and Poland. In this respect, Turkey is probably favored by its large internal markets (19), but also shows the benefits of the recent microeconomic reforms, aimed at reducing red tape and bureaucracy, and promoting competition.

The snapshot emerging from the GCI leads to the following conclusions: with its rank of 59 and a score of 4.14, Turkey, quite predictably, finds itself toward the bottom of the ranking shown in Table 1, performing better than Romania and Bulgaria, but still at some distance from Estonia (5.12), the top performer within the group, and from the EU10 average (4.59).

The picture becomes more mixed, however, once Turkey’s performance is disaggregated at the pillar level. Although Turkey has certainly not dealt fully with all of the key determinants of competitiveness at its level of development—such as macroeconomic stability or education and health—nonetheless, it has made good progress in factors which tend to become more important at more advanced development stages, such as business sophistication and innovation. In this sense, given its stage of development, Turkey’s future competitiveness will hinge crucially on the establishment of efficient production practices and improvements in the operations of its labor and financial markets, as well as on the achievement of improved indicators among the basic requirements factors captured by the GCI, which gives both a combined weight of 90 percent.

The above analysis indicates the country’s readiness to evolve to a more advanced stage of development. But it also underscores the simultaneous importance for the Turkish authorities to intensify current efforts aimed at reducing macroeconomic vulnerabilities, improve access to better education for all citizens, foster the development of more transparent and efficient institutions, better functioning markets, and achieve European and world-class standards of human and minority rights protection and freedom of expression.

Notes

- 1 About half the average for the 10 new members that joined in 2004 and about one-fifth of the average for the EU25.
- 2 *The Financial Times* (2006).
- 3 For an interesting discussion on sectoral and cross country productivity comparisons see Dervis et al., 2004.

Box 4: The United States: An erosion of its competitive potential?

The United States has fallen to sixth place in the Global Competitiveness Index (GCI), down from first place last year, behind Switzerland, Finland, and Sweden and just ahead of Japan. The efficiency of the country's markets, the sophistication of its business community, the impressive capacity for technological innovation which exists within a first rate constellation of universities and research centers, make the United States a highly competitive economy. However, a number of weaknesses, particularly related to macroeconomic imbalances and the institutional environment, are beginning to erode the country's overall competitiveness potential.

The United States has highly efficient markets, ensuring an optimal allocation of the economy's resources. Its goods markets in particular, characterized by low levels of distortion in an environment of open competition across virtually all markets, are assessed as the most efficient in the world, ensuring a large selection of quality goods at low prices, supplied in a timely manner. It also has highly sophisticated financial markets, enabling businesses to gain access to capital at competitive prices from a variety of sources—bank loans, equity markets, venture capital, and a broad range of other instruments. Labor markets have also been cited as a model of flexibility and efficiency, with high rates of job creation and low rates of unemployment, against a background of wage flexibility and considerable ease for hiring and firing at the firm level. Our research also shows that US labor markets are characterized by a comparatively low level of nepotism, and a strong relationship between worker productivity and associated wage levels. Even when compared with many similarly developed economies, the United States has not only been able to attract many of the best and the brightest workers, but it is able to retain them, giving it a top score on a measure of the "brain drain." US universities, without peer in the world, have traditionally attracted some of the best talent from the rest of the world, considerably boosting the country's capacity for scientific innovation.

The strength of the country's markets is matched by its capacity for innovation. The United States has top notch scientific institutions and companies that spend heavily on R&D. Businesses and universities collaborate heavily in that research, spawning centers of innovation, such as Silicon Valley, which are being emulated around the world, from Bangalore to the Hsinchu Science Park. It is therefore not surprising that the United States ranks first worldwide in patents registration. This culture of innovation is buttressed by a number of other critical factors, such as strong intellectual property protection, very high attainment rates of tertiary education, and excellent on-the-job training which fosters the ability of workers and businesses to adapt rapidly to a changing environment. Further, the overall high levels of sophistication of the business community (ranked 8th) ensure that much of this innovation is translated into productive business activity. However, given that all of this activity requires a critical mass of highly qualified workers, there is a danger that the restrictive visa requirements implemented post 9/11 present a non-negligible risk to the economy's ability to maintain a growing talent pool. If the United States does, indeed, begin to face important talent shortages in the

future, we would expect this to have negative repercussions on the economy's competitiveness.

While strengths in the technological and market efficiency areas explain the country's overall high rank, the US economy suffers from striking weaknesses in other areas. To begin, the quality of the country's public institutions falls short of the levels of transparency and efficiency seen in other OECD members. There is a fairly broad range of concerns among business leaders pointing to inefficiencies in the use of public resources (ranked 27th); insufficient even-handedness on the part of government officials in their dealings with private sector interests (rank 39th, well below top performers New Zealand, Denmark, and Finland); inadequate levels of trust on the part of the business community in the financial integrity of public officials (ranked 24th), low when compared with the likes of the Nordic countries, but also others such as Singapore, Switzerland, and Australia. It is clear that incidents such as the federal government's inadequate response to and handling of the after-effects of Hurricane Katrina, may have dented public confidence in government.

Another, even more striking, weakness can be found in the area of health and primary education, where the United States ranks a low 40th overall in the index, below most countries at similar per capita income levels. This is particularly noteworthy since the GCI pillar which assesses this particular set of factors has a large number of hard data indicators. In particular, the United States suffers from weak health indicators compared with other wealthy nations, such as a lower life expectancy. It has higher infant mortality rates than countries such as Japan and Finland and even Slovenia, the Czech Republic, and Korea. A high prevalence rate for HIV/AIDS—placing the United States 79th in the world—is deemed costly to business, despite the fact that at almost 15 percent of GDP, the United States spends more on health care than any other nation in the world, including France and Germany (10 and 11 percent of GDP, respectively), and where coverage, unlike that in the United States, is universal. These indicators suggest that Americans receive worse health care than do the citizens of many countries that spend less, eroding the country's overall competitiveness. Implementation of the long-discussed health care reforms in the country should therefore be seen as a priority for improving the country's competitiveness in the future.

By far the greatest weakness in the United States, however, concerns the macroeconomic environment, as captured in the macroeconomy pillar of the GCI, where it ranks a very low 69th out of 125 countries assessed. This poor showing is in line with continuing international concern over the macroeconomic imbalances in the country, particularly public finances. According to the latest estimates published by the International Monetary Fund (2006), the fiscal deficit in 2006 is projected to exceed 4 percent of GDP, the sixth year in a row that the federal budget will have shown a deficit. The IMF also projects deficits through 2011. In the meantime, gross public debt levels have also risen sharply, from 57 percent of GDP in 2000 to a projected 64 percent of GDP in 2006 and are expected to continue to rise in coming years. This rising stock of public debt is a worrisome trend, as it has taken place in recent

Box 4: The United States: An erosion of its competitive potential? (cont'd.)

years against a background of a sustained increase in interest rates which the monetary authorities have put in place in order to deal with emerging price pressures from strong domestic demand and the international oil market. With potentially open-ended expenditure commitments linked to defense and homeland security, ongoing plans to further lower taxes, as well as other longer-term potential claims on the budget—e.g., the effects of global warming on weather patterns and associated consequences—the

prospects for sustained fiscal adjustment do not seem bright. With a low savings rate, a record high current account deficit—well in excess of US\$800 billion in 2006, equivalent to some 6.5 percent of GDP, an all time record—and a worsening of the US net debtor position, there is significant risk to both the country's overall competitiveness and, given the relative size of the United States, the future of the global economy.

is second to none, ranked first in both indicators. The macroeconomic environment indicators are poor for both, though they are worse for Germany—largely explained by large public sector deficits and high levels of public indebtedness, the latter being higher in Germany than in the United Kingdom—and a strengthening of the currency in both countries in 2005. Germany's infrastructure is better—again, second to none in the world, but the United Kingdom does better than Germany in the higher education and training pillar reflecting good quality of education indicators. The United Kingdom excels in market efficiency indicators, with the most efficient financial markets in the world. The flexible UK labor market, and its low levels of unemployment stand in sharp contrast to Germany, whose business community is saddled with sclerotic labor regulations. But Germany does somewhat better than the United Kingdom in innovation indicators and the sophistication of its business community has no peer in the world. France's performance is reviewed in detail in Box 1 in this chapter.

Italy's competitive position has continued the downward trend observed over the past few years, and the country dropped four places in this year's Report (see box "Is Italy's Ranking Too Low?" in last year's *Global Competitiveness Report 2005–2006*). The list of problems is long and there is little evidence that they are being addressed. To begin with, the underlying macroeconomic environment is poor. Italy has been running budget deficits without interruption for the past 20 years. The fiscal situation has deteriorated significantly since 2000 and, at least according to the IMF's World Economic Outlook (2006), there appear to be no prospects for fiscal consolidation through the end of this decade. Italy's public debt is well over 100 percent of GDP, among the highest in the world. The poor state of Italy's public finances may itself reflect more deep-seated institutional problems, which are reflected in low rankings for such variables as the efficiency of government spending, the burden of government regulation, and, more generally, the quality of public sector

institutions. The market efficiency pillar does not deliver very good results either, with particular weaknesses in the areas of labor market flexibility and financial market sophistication and openness. Italy earned much better scores in innovation and business sophistication, and this explains why, the above weaknesses notwithstanding, its current rank falls between that of Hungary (41) and India (43) and is not actually lower. Hungary's performance is analyzed in detail in Box 2.

As in previous years, Poland remains the worst performer among the EU economies, with a rank of 48, right behind Greece (47) and well behind Estonia (25), the Czech Republic (29) and Slovenia (33), Central and Eastern Europe's top performers. Particular weaknesses in Poland stem from the highly protected and rigid labor markets, particularly harmful in a country where unemployment is close to 18 percent. As in many transition economies, businesses have to deal with uncertainties stemming from weak institutions, corruption and crime, favoritism, an easily influenced judiciary, and a weak property rights climate. Deeper reforms will be necessary if Poland is to increase productivity and stay competitive in the face of rising labor costs. However, instead of focusing on competitiveness-enhancing reforms, the government has more recently reverted to ill-conceived interventions which are undermining the business environment and creating a climate of macroeconomic vulnerability. Plans to create a government-controlled Financial Supervisory Commission and aimed at curtailing the independence of the Central Bank are a notorious recent example.

Russia has fallen from its 53rd rank in 2005 to 62nd in 2006. The private sector in Russia has serious misgivings about the independence of the judiciary, and about the administration of justice. Legal redress in Russia is not expeditious, transparent, or inexpensive, as it is in the world's most competitive economies. A ranking of only 110 among 125 countries in 2006 suggests that it is time consuming, unpredictable, and a burden on the cost structure of enterprises. Partly because of this, the environment

for the protection of property rights is extremely poor and worsening. Russia's ranking in this indicator during the last two years has suffered a precipitous decline, from 88 in 2004 to 114 in 2006, among the worst in the world.

A number of countries have pinned their hopes on strengthening reform efforts toward EU accession. While **Bulgaria**, scheduled to join in early 2007, has fallen from a rank 61 to 72, **Romania**, expected to join at the same time, remained more or less stable, at 68, losing only one place. The reform agenda in both countries is ambitious, and the institutional weaknesses which characterize both countries raise questions about their ability to adapt smoothly to the more competitive environment of the EU and, hence, about their overall readiness to take on the responsibilities of EU membership. **Turkey's** performance is analyzed in more detail in Box 3. The country has moved up an impressive 12 places, to 59 this year. The prospect of joining the EU, which became concrete since accession negotiations opened in October 2005, has certainly boosted the confidence of the business community, even if, as noted in the box, the country faces some important challenges in the period ahead. **Croatia**, the second candidate country in the negotiation process, has equally benefited from the “*EU bonus*” and moved up 13 places to 51.

ASIA

Asia is home to some of the most, as well as some of the least competitive economies in our rankings. **Singapore** leads the pack, ranked 5th overall, followed by **Japan** in 7th place, **Hong Kong** in 11th and **Taiwan** in 13th place overall. These economies all have high-quality infrastructure, flexible and efficient markets and healthy, well-educated workforces. They are also operating on the outer boundaries of the technology frontier, both at the firm and consumer level.

In **Japan**, economic recovery has begun with deflation on the wane, yet a number of challenges, mainly in management of the public finances and market efficiency remain, as outlined in Box 5. Nevertheless, private sector commitment to R&D, sophisticated production processes and a highly educated labor force contribute to deliver one of the most innovative economies in the world.

Another strong performer this year is **Malaysia**, ranked 26th overall, just behind the **Republic of Korea** which was ranked 24th. Malaysia exhibits one of the most efficient economies in the region; flexible labor markets, relatively undistorted goods markets, and public institutions which in many areas (e.g., rule of law, the legal system) are already operating at the level of the top performing EU members which joined in 2004. A well-developed infrastructure and relatively sound regulatory environment,

Box 5: Will Japan rebound?

Japan is recovering from a 15-year recession. In 2004–2005 the country registered one of the highest GDP growth rates in the industrial world, averaging 2.5 percent for the two-year period. Since 1990, the end of the recession has been announced several times, so one might wonder if the current recovery, which begun in 2003, represents a short cyclical upturn or reflects the sustainable impact of a decade of reform.

The recession, which started in the early 1990s with burst stock and real estate market bubbles, exposed deep structural problems in the Japanese economy, accumulated during the 1980s boom years, when economic success loosened discipline and distorted incentive systems: banks loaned without proper risk assessments, government delayed deregulation, interest groups resisted change, and the media remained largely captive to the political and corporate establishment. The real estate collapse left the country's banks with large non-performing loans, contributed to a sharp drop in equity prices, constrained bank credit, weakened consumer and business confidence, and caused domestic demand to contract to historic lows, a development exacerbated by external shocks.

In the meantime, the slow, steady advance of reform began to bear fruit. The business sector, once burdened with excess labor and debt, restructured and trimmed costs, resulting in increased profitability for all firms. Painful lay offs and more flexible employment options (part time or fixed term contracts), represented major changes in this country of “lifetime employment.” The corporate sector was now able to redistribute some of its earning to employees and shareholders, spurring domestic demand. Banks reduced the value of non-performing loans to less than half—from over 40 trillion *yen* at the 2001 peak (representing over 8 percent of GDP) to less than 20 trillion *yen* in 2004. Progress notwithstanding, challenges remain.

In the short to medium term, the challenge will be to consolidate and maintain budgetary stability. At almost 6 percent of GDP in 2005, Japan has one of the highest budget deficits in the world (ranking 114th out of 125 countries in the *Global Competitiveness Report*), and a disappointing 88th position on the macroeconomy pillar in the Global Competitiveness Index (GCI). Lack of fiscal discipline led the major rating agencies to downgrade Japan's sovereign credit rating in 2002. The recent economic recovery has had a positive effect on the budget and improved the overall fiscal outlook, and the government is now committed to reducing the budget deficit by half a percentage point per year to zero by the next decade. Despite these developments, the IMF's latest *World Economic Outlook* envisages gross public debt levels of about 175 percent of GDP through the end of this decade.

Thus, budgetary expenditures will have to be carefully reviewed as there is much scope for increasing the efficiency of public sector spending. Early in the recession, the economy was kept afloat through massive public-works programs—principally infrastructure and support for inefficient companies—in a misguided effort to maintain jobs. It is not surprising,

Box 5: Will Japan rebound? *(cont'd.)*

therefore, that the efficiency of government spending is reportedly low, as confirmed by the Executive Opinion Survey (Survey), where the country is ranked 74th in this particular indicator. Fiscal consolidation will require further streamlining expenditures and increasing consumption taxes—Japan has one of the lowest rates among industrial countries. Further reform of health and social security systems are also necessary, as even the recently increased contributions are not likely to meet the demand for pensions. First steps toward consolidation have already been taken, with privatization of the postal service. The latest plan calls for more ambitious consolidation, which may be necessary to avoid an increase of the debt burden and associated risks. Interest rates are likely to rise in response to mounting inflationary pressures both global and in Japan itself, where the Central Bank recently ended the era of zero interest rates. This will have some implications for the burden of public debt.

The aging and shrinking of Japan's population will affect its productivity and growth potential more seriously than other factors in the past. By 2024, the median age is expected to be at 50, seven years older than today and 13 years older than the US level. Aging may further erode the currently weak fiscal position, diminish labor productivity—already lower than in other industrial countries— weaken internal demand, and reduce national savings, thereby limiting the availability of domestic capital. Labor productivity is already about 30 percent lower in Japan than in the United States and an aging workforce will likely reduce it further, although the overall effect is estimated to be fairly small, on the order of 2.5 percent (Oliveira Martins et al., 2005).

To avoid a situation where the lack of qualified employees threatens competitiveness, more women could be brought into active employment by providing incentives, such as improved child care, currently in short supply. OECD data show that women make up only 40 percent of paid labor and earn only 46.1 percent of male income, pointing to severe obstacles for women in accessing better paid, high-skill jobs. Results from the Survey suggest that there is also scope for improvement by making labor markets and hiring/firing practices more flexible (rank 70). Another way to increase labor productivity sustainably is through enhancing workforce education. While Japan is one of the best performers in on-the-job training (rank 2), poor quality management education appears to be a disadvantage in the country's overall competitiveness picture (rank 59).

The root cause of the 1990s recession was overregulation and poor discipline in goods, labor and financial markets. In the 1980s, a dual structure had evolved, in which a handful of well-known, export-oriented companies reached world-class efficiency levels, while the bulk of local companies lagged behind, protected from new entrants and international competition. Despite progress in regulatory reform, a wide array of tax policies, subsidies, and regulations protecting inefficient companies—particularly in network industries such as energy and telecommunications, and in retail and agriculture—remain in place.

There is considerable scope for strengthening competition in goods and services markets, making them more efficient and open.

The economy is still geared toward protecting existing domestic companies, instead of promoting new entrants and imports. According to the World Bank, it takes 31 days to start a business in Japan, whereas entrepreneurs in OECD countries require on average only 19.5 days. At the same time, domestic enterprises are sheltered from foreign competition mainly because of the import-discouraging regulatory environment. This is partly reflected in the Survey question pertaining to the existence of non-tariff trade barriers, where Japan comes in at rank 53, with low import penetration (12.9 percent of GDP, rank 123).

Without question, Japan has enormous potential. Over the past 50 years, its technological supremacy and innovation capacity have made it a world leader in innovation and research. It has the third highest R&D intensity among the industrialized economies, after Finland and Sweden, with expenditures reaching 3.2 percent of GDP, mainly undertaken by the business sector. Japan is the best performer in the entire sample in the innovation pillar. Interestingly, the world class position of Japanese R&D is so strong, that it was hardly affected during the 15-year recession. Today, the Survey data confirm that company spending on R&D is among the highest in the world (rank 2), research institutions are world class (rank 5), scientists and engineers are widely available (rank 2), and the capacity for innovation is one of the best globally (rank 2). Given this excellent environment, it is hardly surprising that Japan is one of the world leaders in patents registration, second only to the United States. The strong preference for innovative goods in the large domestic market certainly contributes to this performance.

Continued banking reform, dismantling of regulatory barriers, further progress in fiscal consolidation, and surging consumer and business confidence will be conducive for further strengthening innovative capacity, and will allow Japan to maintain its technological supremacy in the medium term, thereby supporting growth and well-being for its population.

coupled with sophisticated production methods and fairly extensive adoption of new technologies should contribute to higher levels of growth and continued rapid development. **Korea's** performance is slightly more uneven than that of Malaysia. Korea has already reached world class levels in certain areas, such as macroeconomic management, school enrollment rates at all levels, penetration rates for new technologies, and levels of scientific innovation, as captured by data on patent registration. However, Korea continues to be held back by a number of weaknesses in the area of institutions, both public and private. As for levels of transparency and openness, the impartiality of public sector officials in their dealings with the business community and levels of corruption, Korea has not yet reached the standards of Finland, Sweden, Denmark, or Chile. **Taiwan** continues to operate at a high level of efficiency but it has dropped below last year's "top-ten" status. It is an innovation powerhouse, with levels of patents registration per capita exceeded only by the United States and Japan (see the case study on the development of the ICT sector in Taiwan in the 2006 *Global Information Technology Report*). It continues to excel in terms of indicators of higher education and training (ranked 7th overall), but, like Korea, its overall rank is weighed down by weaknesses in the institutional infrastructure, as captured by the GCI's first pillar.

India ranked 43rd overall and, as the leading country in the GCI's first stage of development, scores remarkably high in capacity for innovation and sophistication of firm operations. This is especially true of the quality of scientific research and the number of scientists and engineers, which are increasingly supplying highly skilled professionals to the private sector. Indian enterprises tend to utilize sophisticated production processes and use numerous high-quality local suppliers, thus lowering input costs. Firm use of technology and rates of technology transfer are high, although penetration rates of the latest technologies are still quite low by international standards, reflecting India's still low levels of per capita income and high incidence of poverty. As income continues to rise and the fees associated with use of these products continue to fall, usage rates will rise, bringing about improvements in productivity. However, despite those impressive results on technological readiness, insufficient health services and education and a poorly developed infrastructure is limiting a more equitable distribution of the benefits of India's high growth rates. Additionally, successive Indian governments have proven to be remarkably ineffective in reducing the public sector deficit, one of the highest in the world.

China's ranking has fallen from 48 to 54. Its performance is highly uneven and this raises a number of concerns. Consistent with the cautious macroeconomic management of its authorities and extremely high GDP growth rates, the macroeconomy pillar of the GCI shows a very

high rank, 6th overall in the world. This reflects China's low inflation, one of the highest savings rates in the world, and manageable levels of public debt. Perhaps more than any other country in the world, China's large and rapidly growing market has attracted large volumes of FDI in recent years (US\$54 billion in 2004¹⁹) as transnational corporations have invested heavily in order to benefit from the country's emerging middle class and its higher purchasing power. However, as the country is not addressing its many structural problems and institutional shortcomings quickly enough, their long-term effects may be partly disguised by the booming economy. The banking sector is largely state-controlled and the capacity to price risk is limited. Levels of financial intermediation are low and the state has had to intervene from time to time to mitigate the adverse effects of a large nonperforming loan portfolio. Like India, China has low penetration rates for the latest technologies (mobile telephones, internet, personal computers) and because these are expanding more quickly in other countries, China's ranks in these indicators are actually falling behind. Secondary and tertiary school enrollment rates are better than they are in India, but still low by international standards. A number of indicators which capture the sophistication of the business community (e.g., complexity of production processes, extent of marketing) also show lower ranks in 2006 than last year. By far the most worrisome development is a marked drop in the quality of the institutional environment, as shown by the sharp drop in ranks from 60 to 80 in 2006 in the institutions pillar of the GCI, with poor results across all 15 indicators, and involving both public and private institutions. There are concerns about the strength of auditing and accounting standards, protection of minority shareholders' interests, the burden of government regulation, the climate for the protection of property rights, as well as the independence of the judiciary from undue influence. These will have to be addressed in order to strengthen the ability of the Chinese economy to respond to external shocks and to ensure country-wide gains in efficiency sufficient to narrow growing income disparities.

At rank 56, **Kazakhstan** leads the central Asian economies by a wide margin and with an excellent macroeconomic performance, thanks to increasing oil and gas revenues. Tajikistan and the Kyrgyz Republic come in at 96th and 107th respectively. The region as a whole lacks the strong institutions and basic infrastructure that could serve as a foundation to launch a process of convergence in competitiveness levels with the transition economies of Central and Eastern Europe.

LATIN AMERICA AND THE CARIBBEAN

Once again, at 27th and unchanged with respect to 2005, **Chile** has the highest ranking overall in Latin America and the Caribbean. Chile's competitiveness position reflects not only solid institutions—already operating at levels of transparency and openness above the average for the EU—but also the presence of efficient markets, relatively free of distortions. The state has played a supportive role in the creation of a credible, stable regulatory regime. Extremely competent macroeconomic management has been a critical element in creating the conditions for rapid growth and sustained efforts to reduce poverty. In particular, continuing reductions in public debt levels, supported by a fiscal policy that targets an overall budget surplus for the central government have also played a central role in buttressing the credibility of government policy. The resources generated by Chile's virtuous fiscal policy have gone to finance investment in infrastructure and, increasingly, education and public health. Given Chile's strong competitive position, the authorities will have to focus attention on upgrading the capacity of the labor force with a view to rapidly narrowing the skills gap with respect to Finland, Ireland and New Zealand, the relevant comparator group for Chile.

Brazil's ranking, 66th overall, down from 57th last year reflects a particularly poor position in the macroeconomy pillar of the GCI (114th, as compared to 91st in 2005), resulting from a large budget deficit, at least in relation to that of other countries, if not in relation to Brazil's historical performance, which has not been good. High levels of government debt and a wide interest rate spread indicate the heavy intermediation costs in the Brazilian banking sector, which negatively affect private sector investment and contribute to lower economic growth. For a more detailed analysis of Brazil's competitiveness performance see Box 7 in this chapter. **Mexico's** ranking has remained broadly stable, moving up one place to 58. The country shows a somewhat uneven performance over the various pillars of the GCI, with relatively good scores on health and primary education, goods market efficiency, and selected components of technological readiness, e.g., FDI and technology transfer, no doubt reflecting the close links of the Mexican market to the United States in the context of NAFTA. However, this is offset by the same institutional weaknesses as are prevalent in the rest of Latin America. **Argentina** is featured in Box 6.

A lack of sound and credible institutions remains a significant stumbling block in many Latin American countries. **Bolivia** (97), **Ecuador** (90), **Guyana** (111), **Honduras** (93), **Nicaragua** (95), **Paraguay** (106), and **Venezuela** (88) achieve low rankings overall and, in particular, are among the worst performers in the GCR sample for the presence of the basic elements of good governance, including rea-

sonably transparent and open institutions. These countries all suffer from poorly defined property rights, undue influence in decision making, inefficient government operations, as well as unstable business environments. Perceived favoritism in government decision-making, an insufficiently independent judiciary, and security costs associated to high levels of crime and corruption make it difficult for the business community to compete effectively, either within the region or in the world.

A new entry into the *Global Competitiveness Report* this year is **Barbados**, the second-highest ranking economy in the region, with an overall rank of 31. While high levels of public debt and a low savings rate result in low scores in the macroeconomy pillar, the country benefits from high-quality institutions and well-developed infrastructure, which provide a good platform for businesses to develop. **Suriname** is another new addition this year and comes in at a rank of 100 overall. The economy is characterized by rigid labor markets and distorted goods markets. Underdeveloped financial markets reduce access to investment funds and onerous taxation discourages private investment. As part of the ambitious reform agenda in the period ahead, the authorities will have to address serious structural deficiencies.

As in previous years, **Venezuela's** overall performance continues to deteriorate, despite the marked improvement in the macroeconomic ranking (from 45th place last year to 26th this year), due mainly to a government budget surplus, a phenomenon seen in all oil-exporting countries. The single most important obstacle to development, however, appears to be the quality of Venezuelan institutions, especially in combating corruption, undue influence in decision-making, and reducing government intervention. Indeed, Venezuela is the worst performing country in the entire sample when it comes to institutions. While the government has increased spending on health and education since coming to power in 1999, programs of land and plant expropriation as well as other instances of severe interference with the functioning of the market economy have also had a serious impact on domestic businesses and scared off foreign investment. The government policy of expropriation of idle or under-used factories has targeted 700 privately owned plants and FDI has plunged from US\$7.8 billion in 2002 to just US\$1.5 billion in 2004.²⁰ For all the talk about the social dimension of the government's "benign" revolution, school enrollment rates are either mediocre or poor, with Venezuela ranking 85, just behind Vietnam, Suriname and China, at the secondary school level. Venezuela's infant mortality rate of 16 per 1000 live births is on a par with Albania, and actually higher than that of Russia or the Ukraine, two countries still recovering from decades of public health neglect. Not surprisingly, Venezuela's ranking in the Human Development Index in 2003 (the latest) was 75, nearly 30

Box 6: Argentina's unfulfilled potential

During the period 1960–2000 Argentina's average annual real per capita GDP growth was 1 percent, lower than that of all country groupings other than sub-Saharan Africa. Indeed, it was lower than the average for the developing countries (2 percent) and the average for *all* countries (2.4 percent). The logic of compound interest means that, whereas Argentina increased its real per capita income by some 48 percent over this 40-year period, a growth rate closer to 3 percent (not particularly high for some of the better managed economies) would have boosted income per capita by over 200 percent, a huge difference in the evolution of a key indicator of human welfare.

A key characteristic of Argentina's growth performance during this period has been its high volatility, with sharp oscillations over the entire period, in a clear pattern of boom and bust. This applies to the most recent period as well, where a cumulative contraction in real GDP in excess of 18 percent during the period 1999–2002, reflects the lead up to the 2001 financial crisis and its after effects. The country experienced a sharp recovery thereafter, with an average growth of about 8.5 percent during the period 2003–2006.

Clearly the key question facing the authorities is: what are the policy and institutional requirements for sustained growth over the longer term? Argentina is a country with vast potential, richly endowed with physical and human resources.¹ Its poor growth performance reflects a combination of macroeconomic mismanagement and delays in the establishment of the "soft" infrastructures of successful development: better public institutions, good governance, greater efficiency in the operation of goods, labor, and financial markets, and politicians closely identified with the public good. An analysis of the results for this year's Global Competitiveness Index (GCI) suggests several key priorities for reform:

- Argentina's poor growth performance is a reflection of its sorry record of *fiscal management*, the primary cause of the 2001 collapse of the exchange rate regime, the banking system, and the ensuing political crisis. Argentina needs to consolidate the recent improvement in its fiscal accounts by moving to a system where safeguards are introduced which effectively isolate the budget from the venality of politicians, and from the diverse demands placed upon it by economic agents. Improved fiscal management will help reduce the servicing burden of the public debt, will lead to a lower interest-rate structure, and improved credit ratings. A lower debt burden will, in turn, allow spending to rise in other areas, including education, infrastructure and public health, and will boost the country's dismal competitiveness rankings.

Argentina should quickly move to a fiscal regime that targets the government's structural balance. That is, government expenditure should be limited to the level of structural (i.e., cyclically adjusted) revenue. In practice, this means that pro-cyclical policies will be avoided. Indeed, there should be a target for the government balance of a surplus of at least 1–1.5 percent of GDP on average.² This approach to fiscal policy will

have a number of distinct advantages: it will depoliticize the budget process from election cycle spending or other politically motivated discretionary spending, an important achievement in Argentina, given its historical antecedents. It will establish a smoother profile for government expenditure, which, in turn, will allow the government to implement a predictable public investment program. By institutionalizing fiscal discipline, an environment will be created in which, in the absence of an exchange rate target, monetary policy will be able to play an effective countercyclical role. This regime would need to be supported by institutional reforms to improve intergovernmental fiscal relations, thus better aligning the inefficient incentives which have characterized the relations between the federal government and the provinces, a root cause of Argentina's inability to rein in public spending. In the absence of such reforms, the risk is high that the current boom will, as in the past, be followed by another bust.

- The worst-ranking among the 9 pillars of the GCI, by a significant margin, is the quality of Argentina's *public institutions*, 118th in the world among 125 countries. All of the indicators used in this pillar come from the Forum's Executive Opinion Survey and represent the considered views of the country's business community. They register serious concerns about the property rights environment, the independence of the judiciary, wastefulness in the use of public resources, the lack of evenhandedness in the government's relations with the private sector, and see public officials as not being sufficiently impartial in their dealings. There is a perceived prevalence of corrupt practices as well, involving diversion of public funds to private ends—Argentina has a rank of 97 in the last edition of Transparency International's Corruption Perceptions Index (CPI), among the worst in Latin America. The Forum's own corruption index puts Argentina in 70th place among 125 countries, broadly consistent with the CPI, which has much broader coverage.

Improved governance in Argentina will involve several mutually reinforcing elements: government willingness to open the accounts and activities of public institutions to public scrutiny, and to institute reliable systems of auditing and financial management will clearly be key. A number of studies have shown that transparency is particularly important in the case of the tax system, where the ability of governments to collect revenues sustainably will depend as much on the public's perception of the fairness of the tax system as on the use made of those public funds, and will counteract the deep cynicism of taxpayers, investors, and other economic agents. An additional concern in Argentina has to do with lack of adequate access to a free press, giving it a ranking of 105 among 125 countries in the Forum's freedom of the press indicator. Sen (1999) notes that societies operate better under some presumption of trust, and that openness, access to information, and the freedom for society's members to deal with one another under "guarantees

Box 6: Argentina's unfulfilled potential (cont'd.)

of disclosure and honesty" are essential for combating corruption and other misuses of political power.

- A third set of factors which help explain Argentina's low competitiveness rankings have to do with *inefficiencies in the operations of various markets*. Along with the rest of Latin America (with the possible exception of Chile), Argentina suffers from a long tradition of mindless bureaucracy and red tape which, among other things, discourages the creation of new businesses and the development of an entrepreneurial class. Argentina's labor markets are insufficiently flexible, with heavy constraints on businesses to adjust payrolls to demand conditions. The government has increasingly intervened in the economy, leaning on businesses to impose some price controls. Ironically, these appear to have been largely ineffective, as Argentina continues to suffer from high inflation—a low rank of 102 in 2005. Although the authorities seem satisfied that progress has been made in bringing inflation down from its hyperinflationary past, inflation has dropped virtually everywhere in the world, and, as in years past, Argentina remains in the same undistinguished company of Pakistan, Nicaragua, and Venezuela. The government's interventions have at times been truly incomprehensible, as when it decided recently to introduce a system of dual pricing for gasoline, depending on the provenance of the owner of the vehicle, a decision involving elements of blatant discrimination and dubious legality.

The Forum's contracts and law index gives a rank of 118 to Argentina this year. This index captures a number of rule-of-law variables and aspects of the legal and regulatory environment. A telling example of weakness in this area is the government's failure to renegotiate a large number of public service concession contracts, suspended by an Emergency Law passed by congress in early 2002, in the aftermath of Argentina's debt default. More than four years after suspension of these contracts, the government is no closer to establishing a clear framework for public contracts affecting gas, electricity, telecommunications, and water services. A draft law proposed by the government is seen as deeply flawed, since it fails to establish a transparent and predictable framework for tariff adjustments, gives excessive scope for government-imposed tariff reductions, denies suppliers the right to seek international arbitration, and prevents disconnection of service to non-paying users. Not surprisingly, these delays have led to the departure of some foreign investors, and utility companies have begun litigation in international arbitration tribunals. Predictably, they are leading to energy shortages and other infrastructure bottlenecks, have resulted in government subsidy of consumer gas prices, and are raising fundamental questions about Argentina's investment climate.

To escape the decades-long cycle of boom and bust, Argentina will have to institutionalize its fiscal policy, aim for a structural surplus of at least 1 percent of GDP, and imbed this in a new law. This would be a sound way to build on the progress made in recent

years in changing the pattern of fiscal indiscipline. But it will not be enough. The authorities will also have to improve the business climate, anchoring it in a framework of predictability, transparency, free of heavy handed, often ill-conceived, government intervention. There is no intrinsic reason why Argentina can not continue to grow at 6–8 percent per year for the foreseeable future, provided efforts are made to establish a sound policy framework.

Notes

- 1 All three Latin American recipients of the Nobel Prize in science have been Argentine nationals (one in chemistry and two in medicine).
- 2 The authorities' current claim to be running budget surpluses does not take arrears and interest capitalization on non-performing debt into account; when these are considered, the government registered a deficit of 2.9 percent of GDP in 2005.
- 3 Of the 125 countries ranked in the GCI, 98 had an inflation rate in 2005 of less than 9 percent; Argentina was not among them.

Box 7: Laying the foundations for a new “Brazilian miracle”

With a population of 181 million and a GDP of close to US\$800 billion in 2005, Brazil is the largest economy in Latin America and an increasingly important global player. Abundant natural resources coupled with a diversified industrial base provide the country with a competitive edge in agriculture and livestock and a rich potential for further export diversification, less dependent on primary goods and more on higher value-added lines of production. Due to its large domestic market and diversified industrial structure, Brazil has been quite successful in attracting large inflows of FDI.

Brazil has vast unfulfilled potential. In decades past it has seen relatively short periods of exceptionally good economic performance with high growth rates and stable inflation, against a background of rapid industrial diversification. But these periods have been followed by episodes of slow growth, characterized by macroeconomic instability and a worsening of income distribution.¹ Indeed, the debt crisis in the early 1980s marked an inflexion point in Brazil’s economic development, precipitating a “lost decade,” in which aggregate expenditures were squeezed to provide the necessary resources to service the debt. However, the virtual stagnation of income per capita growth² may have prompted a rethinking of the prevailing development paradigm. The 1990s witnessed increasing recognition on the part of successive governments of the importance of macro stability and the need to create an institutional environment broadly supportive of private sector development. Nevertheless, progress in establishing a solid foundation of macro stability has been slower than expected, reflecting the difficulties of quick fiscal adjustment in a country suffering from wide income disparities and unmet social needs.

Brazil’s unfulfilled potential is made evident by a broad range of indicators used in the World Economic Forum’s GCI, which shed light on the country’s relatively poor ranking: 66th out of 125 economies covered, a drop of 9 positions with respect to 2005. Following is a brief review of those key factors which are pulling down Brazil’s ranking. This will, in turn, suggest the areas for priority attention in policy formulation and reform.

- By a significant margin, Brazil has the lowest ranking—114—in the macroeconomy pillar of the GCI. Without doubt, the country’s *fiscal performance* in recent years has improved, reflecting the strong commitment of the present government to sounder public finances. However, Brazil suffers from high levels of public indebtedness—gross public debt is close to 72 percent of GDP, very high by international standards. While the public sector deficit in 2005 (3.3 percent of GDP) was much lower than in years past—it was more than twice this level in 2003—and the country has been running primary surpluses to improve its debt dynamics, these are improvements over Brazil’s own mediocre past and not in comparison to fiscal performance in other countries, many of which have also boosted the quality of budgetary management, in some cases dramatically. Furthermore, as noted by Singh et al. (2005), in Brazil a full 80 percent of public sector spending suffers from some sort of rigidity, whether in the form of earmarking of revenue to particular expenditure categories, constitutional or legal mandates

that establish floors on certain types of spending, the automatic linking of social and pension benefits to the minimum wage, mandatory transfers to regional governments and other forms of no doubt well-meaning interventions which, over time, have sharply limited the ability of the government to restructure spending in a way that could allow for greater prioritization of productivity-enhancing expenditure categories, such as education, training, and infrastructure improvement.

Furthermore, distortions in the financial system continue to drive a large wedge between borrowing and deposit rates, hampering a quicker expansion of investment and limiting bank intermediation in delivering resources to small and medium-sized enterprises. The benchmark SELIC³ rate is currently above 15 percent, extremely high by international standards, at a time when inflation rates all over the world have been dropping continuously.

- The next worst ranking (104) is in the institutions pillar, particularly its *public institutions* component, highlighting a number of serious weaknesses which are clearly compromising Brazil’s growth performance. Like much of the rest of Latin America, the Brazilian business community operates against the backdrop of an entrenched culture of bureaucracy and red tape. According to the World Bank’s *Doing Business Report*, it takes 152 days and 17 procedures to start a new business in Brazil, 19 procedures and 460 days to get a license, 546 days and 15.5 percent of the outstanding debt to enforce a contract. Government spending is perceived as being wasteful (a rank of 119), reflecting the rigidities noted above which dissipate the potential value of well-targeted spending programs. The business community has little confidence in the financial probity of public officials, who, therefore, may not have sufficient credibility vis-à-vis civil society and the corporate sector. The poor rank of 92 is clear evidence that the court system is not perceived as operating within a framework of broad independence, free of undue influence—a feature which substantially adds to business costs in the form of delays in the administration of justice and/or the need to pay bribes to resolve legal disputes. An inefficient and burdensome tax system with high corporate tax rates, coupled with high payroll taxes, including social contributions and restrictive labor regulations have, among other things, contributed to shift a large part of the workforce toward the informal sector.

According to the World Bank, Brazil’s informal economy is huge, close to 40 percent of national income in 2003. This data is corroborated by the Forum’s Executive Opinion Survey (Survey) which gives Brazil a rank of 91 out of 125 countries for the prevalence of its informal sector, far below that of Chile, Japan, and the US, the best performers for this indicator, but also well below India and China.⁴ The oversized informal sector is thought to account for close to half of all barriers to labor productivity growth in the country (Elstrodt et al., 2006). It also cuts across all economic sectors, encompassing companies which operate partially or totally outside the law, gaining a

Box 7: Laying the foundations for a new “Brazilian miracle” (cont’d.)

comparative advantage vis-à-vis regular companies, either by evading taxes and social contributions, ignoring safety and product-quality regulation, or disregarding intellectual property rights. The existence of this burgeoning⁵ parallel economy represents a drag on the country’s development prospects not only because it subtracts market shares and profits from law-abiding firms, thereby undermining their ability to invest in R&D, innovation and training, but also because it depresses the economy’s overall productivity levels.

- Beyond these microeconomic deficiencies, Brazil’s *education indicators* show evidence of structural problems. Primary and secondary education is characterized by low standards, high dropout rates, and a regional bias against the northeast. At the same time, access to the network of public universities tends to benefit those with higher incomes, since the poor have difficulty meeting admission requirements. Inadequate education and training not only reinforce the income distribution patterns in the country, but prevent workers from finding more qualified posts in the formal sector, relegating them to low paying, low-skill jobs. Brazil’s tertiary enrollment rate is low by international standards, placing the country 75th among 125 countries, a troubling indicator, given the increasing complexity of the global economy and the high returns to investment in higher education. This is yet another area where the constraints on government expenditures have sharply limited its ability to invest more in competitiveness-enhancing areas such as a world class educational system.

The above notwithstanding, the past decade has seen efforts by the government to address the above-mentioned impediments to growth. Pension reform for public sector workers was approved in December 2003, and this should help put the fiscal accounts on a more sustainable path. On the enforcement side, a new superviso-

ry board was established in July 2005 to cut tax evasion and combat fraud. On the education front, former president Cardoso’s focus on primary education led to a sharp increase in primary school enrollment rates and a decrease in illiteracy and dropout rates. President Lula da Silva’s administration has tried to build on these efforts, with primary education occupying a central position in the design of the poverty-relief programs—notably the *Bolsa Escola*.

Provided the weaknesses identified above are addressed, there is no reason why Brazil could not move to a higher growth platform where all Brazilians could reap the fruits of increased prosperity.

Notes

- 1 UNDP, 2003; Brazil, with a Gini coefficient of 0.61 has one of the most inequitable income distributions in the world, with the wealthiest 10 percent of the population accounting for 48 percent of the national wealth and the poorest 20 percent for only 2.5 percent; income distribution is also skewed along regional lines, with 60 percent of the poor concentrated in the northeastern states.
- 2 In the early 1980s Brazil had a PPP-adjusted GDP per capita well above that of Korea; by the mid-1990s Korea, with its limited natural resources, had a GDP per capita more than twice that of Brazil.
- 3 SELIC stands for Special System for Settlement and Custody, the central depository of securities issued by the National Treasury and the Central Bank of Brazil.
- 4 The Survey question is: “How much business activity in your country would you estimate to be unofficial or unregistered (1 = more than 50 percent of economic activity is unrecorded; 7 = none, all business is registered); Chile, Japan, and the United States have the top scores: 5.3, 5.2, and 4.9 respectively; Brazil has a score of 2.9, below India (3.8) and China (3.7).
- 5 Indeed, according to J. Capp et al. (2005), in the 1992–2002 period the informal sector has remained unchanged at 55 percent of total employment and has absorbed 87 percent of new jobs created.

places *below* its 44th rank in 1990, and 14 places lower than the 61st rank at the outset of the Chavez administration.

MIDDLE EAST AND NORTH AFRICA

The competitiveness landscape in the Middle East and North African region has generally seen an improvement since last year’s *Report*. Among the larger economies, **Algeria** and **Morocco** moved up six places each, to ranks 76 and 70, respectively, while **Tunisia**, the most competitive economy of the region, reached rank 30, up seven places from last year, closely followed by the **United Arab Emirates** at rank 32. The smaller Gulf States also did well: **Kuwait** moved up five places to rank 44, **Qatar** leaped

eight places to rank 38, and **Bahrain** achieved rank 49. **Israel** also saw a notable improvement, advancing eight places to rank 15 (a detailed assessment of Israel’s competitive performance is covered in Box 8). Only **Egypt** (rank 63) and **Jordan** (rank 52) lost significant ground, dropping eleven and ten ranks respectively.

The move to a more comprehensive Index this year has caused some adjustments in country rankings. The new Index considers a number of important factors which were not accounted for previously and provides a more balanced picture of the issues that have an impact on competitiveness. For example, some of these newly assessed aspects include infrastructure, higher education and training, business sophistication, technological readiness, and innovation, as well as efficiency of financial markets.

Box 8: Unleashing Israel's competitive advantage

This year, Israel ranks 15th worldwide in the Global Competitiveness Index (GCI), up from 23 last year, making it one of the world's most competitive economies. Its most significant achievements were concentrated in the areas of technological readiness (up 20 places to rank 3), macroeconomic management (up 17 places to rank 50), market efficiency (up seven places to rank 14), and various areas of infrastructure.

Spurred by the global upswing and a concurrent increase in world trade,¹ a recovery of the high-tech sector and an improved internal security situation,² the Israeli economy has been improving since 2003, witnessed by an impressive GDP growth rate of 5.2 percent in 2005 (4.3 percent in 2004) and forecasts of growth for 2006 of more than 5 percent, made before the August 2006 hostilities broke out.

The global economic recovery resulted in a sharp upturn in demand for high-tech production, which constitutes some 70 percent of Israel's industrial exports, the highest percentage in the world. In 2005, high-tech exports rose by nearly 10 percent, to US\$18.8 billion. The country also benefited from the rise of the high-tech sectors in India and China and their emergence as increasingly important customers of Israeli products.³

In addition to these external global factors, the competitiveness improvements are the culmination of very significant capital market reforms, coupled with fiscal discipline, which have introduced a greater degree of competition and are now clearly bearing fruit. The 2003 New Economics Agenda, pushed through with public consensus during the recession, was based on three main tenets, a reduction in government expenditure, greater fiscal discipline and tax cuts, all of which have done much to create the conditions for higher productivity and growth.

The country's general government expenditure-to-GDP ratio which has been traditionally high 47.3 percent in 2005, compared to the OECD average of 41.8 percent, due to huge defence spending and substantial interest payments on the debt stock was significantly lower in early 2006 than its customary seasonal path. The fiscal consolidation effort aims to bring this ratio down to 34.4 percent of GDP by 2010, increasing the budget by less than the GDP growth rate, namely 1.0 percent in 2006 and 1.7 percent in 2007.

The budget deficit still remains on the high side compared to other western countries, reflected in a rank of 71. But there were signs of improvement, as shown in its jump upwards by 22 ranks over last year, as fiscal consolidation trimmed the deficit/GDP ratio from an average of 4.4 percent during 2001–2004 to around 3 percent in 2005. The current budget is projected to maintain it at this level in the years ahead. The reduction in the budget deficit, brought on by rapid economic growth and financed in part using privatization revenues, has also made it possible to reduce the high debt/GDP ratio, which declined by 3.8 percent to 96.9 percent of GDP in 2005, compared to an OECD country average of 81.2 percent (in 2005).

The reforms have also helped to improve market efficiency. For example, although still high, the extent and effect of taxation ranked 58, an improvement of 17 ranks, following a comprehensive tax reform package approved by the Knesset in July 2005, to be

implemented from 2005 to 2010. This included bringing down the marginal labor tax rate to 44 percent by 2010, a reduction in VAT by one percentage point to 15.5 percent and a gradual decrease in the corporate tax from 31 to 25 percent. Compared to other OECD countries, the maximum tax rates in Israel are no longer high. Moreover, Israel has no estate or inheritance taxes.

The area that saw the most impressive developments was the financial market, highly developed by regional and international standards, as reflected by the country's 13th place under this category, a jump in eight places vis-à-vis last year. This appears to be due, first and foremost, to the recent capital markets reform, led by the Bachar Commission, which tackled the two major problems: the high degree of market concentration resulting from two institutions that accounted for about 70 percent of the asset management industry, and an existing conflict of interest arising from concentrated ownership of funds by banks and their role in the provision of financial retail advice. This was done by separating asset management activities from commercial banking, introducing a substantial degree of competition and professionalism and laying the groundwork for a revolution in the sophistication and independence of asset management.

This has built on a previous round of important reforms that phased out the high-yield guaranteed-rate government bonds held by pension funds mostly public pension funds held by Histadrut, the main labor union in the country and equalized the tax treatment of capital gains between Israeli and foreign securities. Israel ranks 2nd place globally in its excellent access to venture capital, which is channelled to early-stage companies, especially ICT and biotechnology start-ups. The Israeli government continues to play an active role in the development of this market by financing joint public-private venture capital funds to leverage private capital from foreign investors.

Israel ranked 23rd for overall infrastructure quality, up seven places since last year and 31st for railroad infrastructure development, reflecting a jump of ten places. These improvements reflect ongoing reforms concentrated in rail, roads, ports, and electricity supply infrastructure, and have introduced elements of competition. Foremost among the large infrastructure allocations is a multi-year budget of NIS20 billion to Israel Railways, a public corporation since 2004–05. The government also plans to introduce mass transit systems in metropolitan centers, an additional light rail system in Jerusalem, and has allocated approximately NIS 3.3 billion averaging almost 1 percent of GDP for the period 1997–2005 toward road infrastructure development, mainly through build, operate, transfer (BOT) schemes.

Government companies have been established to improve port infrastructure management, maintenance, and development. In 2005, an agreement was reached with unions to begin the privatization process aimed at introducing more competition into the port container market, with the goal of significantly reducing ship waiting times. The Electricity Sector Law, amended in 2003, is focused on reforming the electricity industry by unbundling production activities of the state-owned Israel Electric Corporation, with the aim of lowering prices and improving service.⁴

Box 8: Unleashing Israel's competitive advantage (cont'd.)

Israel's large-scale fiscal consolidation, will enable future cuts in the tax burden and public debt, thereby freeing up capital market resources for the business sector, lowering the economy's long-term interest rate, and stimulating growth and investment. As long as the macroeconomic targets are met, the combination of consolidation and ambitious capital markets reform is expected to fully unleash the country's competitive potential.

The economic impact of the recent hostilities has been limited. The effects of these events on real activity, on the exchange rate, inflation, and on financial markets has been small and has demonstrated Israel's continued economic resilience in the face of ongoing instability in the region. Over the longer term, much will be gained from securing lasting security arrangements with its neighbors, to remove uncertainties about the political environment and

allow a redirection of resources toward productivity-enhancing areas, such as education and infrastructure. Without doubt, the entire region would greatly benefit from the associated "peace dividend."

Notes

- 1 IMF (2006), p. 205; in volume terms, annual growth in world trade has increased from 3.4 percent in 2002 to 7.3 percent in 2005, and is forecast to reach 8 percent in 2006.
- 2 Bank of Israel (2005).
- 3 *BusinessWeek* online, 30 December 2005.
- 4 Government of Israel, Ministry of Finance (2006).

Box 9: South Africa: Challenges on the road to prosperity

Strong global growth and high commodity prices, combined with buoyant consumer demand have enabled South Africa to grow at a robust rate exceeding 4 percent since 2004, set to continue this year. Despite significant achievements since the ending of apartheid in 1994, South Africa is in many ways still struggling with its legacy, including gross inequalities, high unemployment, major skill shortages, and a striking dichotomy between first and third world characteristics.

Entrenched inequalities act as a deterrent to growth, development, employment creation and poverty eradication, as reflected in the results of this year's Global Competitiveness Index, in which South Africa has dropped five places to rank 45. It also lost 12 places (falling to rank 58) in the basic requirements subindex, highlighting the fundamentals for achieving sustained growth in factor-driven economies: strong institutions, adequate infrastructure, a supportive macroeconomic environment, and good basic health and education.

Relative to its overall rank, the country does particularly well in a number of areas typically reserved for rich, innovation-driven economies: it ranks 29th in the innovation subindex. Its economic sophistication is also reflected in high ranks for property rights (22), private institutions (23), goods (20) and financial market efficiency (27), business sophistication (32), and innovation (29).

On the other hand, South Africa's per capita income of US\$12,160 (PPP for 2005) stands in stark contrast to its low—and since 1995 declining—human development ranking, as measured by the UNDP's Human Development Index. It ranks only 103rd in the world for basic health and education, extremely low for a country at this level of development. With a Gini coefficient of 57.8, South Africa has one of the highest levels of income inequality in the world. The gulf between the poorest and richest quintiles of

the population is huge, with the former commanding less than 4 percent of national income, and the latter over 62 percent.¹ Moreover, glaring inequalities are seen not only in income levels, but also pertain to access to or ownership of productive assets such as land, basic infrastructure, capital, and information, as well as to education and advanced skills.

While economic growth is essential, it is not a guarantee of employment creation, and South Africa's unemployment situation is grave. The most recent data (March 2004) show an unemployment rate of 27.8 percent—a steep increase since the 20 percent in 1994²—with 4.6 million unemployed and a labor force participation rate of only 54.5 percent. The unemployment rate among black Africans was the highest of any of the country's population groups (29 percent for males and 38 percent for females), while the rate for whites was approximately 5 percent. Employment in the formal sector (excluding agriculture) accounted for around 73 percent of total employment.³ However, data across population groups show that only 65 percent of employed black Africans were in the formal sector, 24 percent in the informal sector, and 11 percent in domestic service, as compared to whites who are predominantly employed in the formal sector.

The government has made considerable progress in redressing these remnants of apartheid, most recently by introducing the Broad-Based Black Economic Empowerment Act 2003 (BEE), a legislative framework aimed at increasing the effective participation of black people in the economy, as managers, owners of enterprises and productive assets, and developing human resources and skills. To date, the implementation of the Act takes place through voluntary charters such as for the Maritime Transport & Service Industry, the Forwarding & Clearing Industry, the Mining Industry, the Tourism Industry, the Petroleum and Liquid Fuels Industry, the

Box 9: South Africa: Challenges on the road to prosperity (cont'd.)

ICT and the Financial Sector. These are either sectors that continuously engage in government contracts or those that are central to future growth. Enterprise-level targets and timetables are monitored by an independent body and the “scores” made public. Target quotas aim to have 40 percent blacks on boards of directors, 5 percent of payrolls reserved for skills development, and 40 percent black people employed at certain occupational levels. Beyond peer and public pressure to meet these targets, their achievement is tied to economic incentives, e.g., government preference to enterprises that satisfy the scorecard criteria when granting licences, concessions, or when engaging in any economic activity.

However necessary the BEE strategy may be, it entails significant restrictions on labor market flexibility. It will surprise no one that South Africa ranks 123rd in labor market flexibility, encompassing hiring and firing practices, flexibility of wage determination, and union/employer relations. Indeed, the BEE process has been criticized by enterprises which find it heavy-handed, and not likely to produce the much needed relevant skills. It is seen by some as simply chasing quotas without making a real impact on the transfer of wealth to ordinary people.

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 rank 56 from 47 last year. Engineering and construction enterprises feel particularly constrained by the lack of skilled human capital. Only 11.6 percent of the labor force aged 25–29 has a tertiary education⁴ and there is a large pool of unskilled labor. Therefore, the implementation of education and training programmes which deliver the skills necessary for a modern economy are a key ingredient to boost economic performance.

Infrastructure represents another major challenge. South Africa experienced a huge drop in ranking for this pillar, from last year’s 35 to 49th place. To correct this situation, the South African government launched the Accelerated and Shared Growth Initiative of South Africa (ASGISA), with the ambitious aim of maintaining GDP growth at 4.5 percent until 2009, and raising it to 6 percent in the new decade, supported by substantial infrastructural investment. The government’s Medium Term Budget Policy Statement 2005 outlines public and parastatal investment spending in the region of some US\$53 billion for the three fiscal years 2006 through 2008. The Gautrain Rapid Rail Link, targeted for completion between Johannesburg and Pretoria by 2010, at a cost of some US\$2.9 billion, is part of the planned infrastructure investment. Maintenance, upgrading and expansion of existing infrastructure will also play a role in propelling growth and boosting real fixed capital stock. Other ongoing structural reforms include the introduction of a second fixed-line telephone operator, to increase competition and reduce communications costs. Policy efforts must now concentrate on deregulating the power-generating sector and upgrading distribution networks, water-supply infrastructure, and railway lines.

The macroeconomic picture is generally bright, as reflected by a respectable rank of 46. However, a strong currency, combined

with low interest rates and an increasingly empowered black middle class fuelled a consumer spending boom which has resulted in a sizeable increase in the current account deficit, amounting to 6.4 percent of GDP in the first quarter of 2006, the highest ratio registered since 1982. Currently, this is easily financed by capital inflows, but there is a risk that this trend could reverse. A first reassessment of risks and returns in emerging markets by international investors already took place in May 2006. The nominal effective *rand* rate weakened accordingly by just under 10 percent over a period of three weeks. There continues to be a downside risk that inflows could dry up, resulting in further depreciation, the derailing of the consumer spending boom, and a rise in interest rates. Such a move could have important socio-economic ramifications, in part because it would hit the newly empowered black middle-class, and also because many BEE schemes, which are financed through debt-creation, could suffer should interest rates rise significantly.

Finally, the lack of security, or the perception thereof, is still a serious impediment to doing business in South Africa. This is reflected in a rank of 94, down from 90 last year, as the business costs of crime and violence and the unreliability of police services are all deemed damaging to business. The lack of security may also exacerbate the brain drain from South Africa, which in turn tightens the market for skilled labor, another priority area for the government to tackle.

The past decade has seen a major upheaval in the economic, political and social landscape of South Africa. Through prudent policies and sound economic management, the government has made impressive steps to manage the transition. However, much remains to be done before the country can fulfill its huge potential. In particular, boosting basic and advanced education and training, doing more to counter the spread of HIV/AIDS, and implementing measures to increase labor market flexibility and improve security should remain high on the policy agenda as a means of tackling the unemployment problem, increasing the supply of skilled labor, and creating a more business-friendly environment, all of which should ultimately help to reduce inequality and poverty.

Notes

- 1 UNDP, 2005.
- 2 Statistics South Africa, 2004; Statistics South Africa, 2005; ILO, 2005.
- 3 The informal sector accounted for 18.1 percent of total employment, while 8.5 percent represented domestic workers.
- 4 ILO, 2005

The results show that many countries in the region have deficiencies in these newly included areas.

Government budgets in resource-rich nations in the region, particularly in the Gulf countries, have benefited significantly from higher oil revenues and from their prudent management. The world's top four performers on the macroeconomic pillar all come from this region: Algeria (1st), Kuwait (2nd), Qatar (3rd) and United Arab Emirates (4th). It is noteworthy that many of these countries, despite abundant public finances, have seen major improvements only in the area of health and primary education, but not in higher education and training or in infrastructure, all crucial components of a diversified economy in which prudent public investment could contribute to enhancing competitiveness. Thus, the availability of public funds appears—at least for now—not to have translated into improvements in human capital, which would play an important role in helping these economies which are highly dependent on oil and vulnerable to external shocks to diversify their economic base.

Among the Maghreb countries, **Algeria** made impressive strides, moving up from a rank of 82 to 76, due to significant improvements in the institutions pillar, in health and basic education and in innovation. A strong macroeconomic pillar characterized by increasing revenues from oil and gas sales appears to have boosted its performance relative to the government balance and government debt, while its inflation environment also saw a significant favorable development. These improvements were counterbalanced by low scores in the market efficiency pillar (rank 96)—important for the efficiency-driven stage of development—as well as for technological readiness (rank 100) and business sophistication (rank 103), showing that the country still has a long way to go before it reaches the innovation-driven stage of development. Furthermore, its low rank of 115 for business costs of terrorism suggests that security is still a major problem affecting the business environment and imposing heavy costs which are not conducive to sustained economic growth.

Morocco edged up to rank 70, up six places. The country has made important strides in improving the state of its public institutions, especially security, and of its infrastructure, basic health, and education. The results also show that Morocco has made progress in improving technological readiness, with big gains in firm-level technology absorption, and technology transfer through FDI. The country has seen an increase in internet users and improved innovation—in particular through stronger university/industry research collaboration—better protection of intellectual property rights, and has benefited from a greater availability of scientists and engineers. Nevertheless, the country's population is still poor and deprived of basic benefits of development, especially in the areas of health

and both basic and advanced education, where outcomes are still suboptimal.

Egypt, ranks 63rd this year, dropping 9 places. It suffered an extremely sharp drop of 58 places to rank 108 in the macroeconomy pillar, as it struggled with worsening government finances and a large debt ratio. It also fell back in the higher education and training and innovation pillars to 75th and 82nd rank, respectively.

SUB-SAHARAN AFRICA

Although sub-Saharan Africa has experienced high growth over the past few years, the results of the Global Competitiveness Index suggest that this trend may not be sustainable. In terms of competitiveness, the region lags far behind the rest of the world. Nineteen of the 24 countries from sub-Saharan Africa included in this year's sample rank among the 25 weakest performers occupying ranks of 100 or lower. The seven newcomers to the GCR from the region (**Angola, Burkina Faso, Burundi, Cameroon, Lesotho, Mauritania, and Zambia**) are no exception. All of them rank below 100 and suffer from a weak performance in most of the nine pillars. Only a few countries are taking advantage of the global boom in commodity prices to build a basis for long-term growth.

Over the last 50 years, the growth of Africa's exports did not manage to keep up with the surge in global trade flows, suggesting that the continent has not benefited much from globalization. In this respect, the collapse of the Doha Round of trade negotiations, which could have opened up new market opportunities for Africa, mainly in agricultural and labor-intensive products, is all the more disappointing. However, should Doha be revived, in order to fully benefit from improved market access, the supply capacity of African countries must also be strengthened and this should go hand-in-hand with a greater emphasis on the basic requirements for the factor-driven stage of development, namely better macroeconomic management, infrastructure, education, and institutions. Indeed, as shown by the results of the GCI, 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.

South Africa remains the top performer of the region (45th overall). Despite significant achievements since the ending of apartheid, the country is in many ways still struggling with its legacy, including gross inequalities, high unemployment, major skill shortages, and a striking dichotomy between first and third world characteristics. The competitive situation in the country is analyzed in greater depth in Box 9.

Nigeria shows a very different picture. Weak and deteriorating institutions—including a serious security problem—lower ranks in infrastructure and basic health and education, and a very significant change for the worse in macroeconomic management, all of which have depressed the country's rank to 101, from 83 last year. Despite its huge revenues from record-high oil prices, the large majority of the population remains very poor and without access to basic health care and education.

Tanzania and **Uganda**, two of the region's larger economies, have not managed to significantly improve their competitiveness and are ranked 104th and 113th, respectively. Even relative to these low overall rankings, they do even more poorly on health and primary education (118th and 123rd, respectively) and on higher education and training (112th and 107th, respectively). Although they do better on some of the innovation factors, their failure to make a significant improvement in the basic requirements subindex are likely to dent their growth prospects.

Botswana has been relatively successful, ranking 81st, the third best performance in sub-Saharan Africa after South Africa and Mauritius (55th). The government succeeded in using its wealth from key natural resources and diamonds to boost the country's growth rate. Key to Botswana's success were its reliable and legitimate institutions, ranking a high 18th worldwide for wastefulness of government spending, and 26th for public trust of politicians. Botswana is known to be one of the countries with the lowest levels of corruption and graft in Africa. The transparency and accountability of public institutions have contributed to a stable macroeconomic environment, efficient bureaucracy, and market-friendly regulation.

Conclusions

This chapter has presented a comprehensive overview of the results of the World Economic Forum's new Global Competitiveness Index, officially being launched this year as the primary instrument for assessing national competitiveness. This Index represents a major step forward in the evolution of the Forum's work in the area of competitiveness, building on the work done by others in the past including, most recently, by Jeffrey Sachs and John McArthur, in the context of the Growth Competitiveness Index. Reflecting changes in the global economic environment and in the relative importance of those factors affecting productivity, the Global Competitiveness Index puts forward an elegant formulation of the key drivers of competitiveness. It formally incorporates the concept of stages of development, attaching different weights to different factors, depending on the role they play in each country, given its institutional and structural characteristics, and as reflected in the levels of per capita income.

The aim of our research is twofold: first, we wish to provide individual countries with a useful tool that identifies in a transparent and sensible way those priority areas where efforts would be best focused to remove barriers to competitiveness. Government and business leaders are generally aware that the reform agenda includes a broad array of issues. Even the most advanced economies, already operating at high levels of efficiency and having achieved a high standard of living, suffer from structural rigidities and institutional weaknesses that are often a drag on growth. The Global Competitiveness Index aims to give a sense of the priorities for reform, whether these be labor market reforms in continental Europe, fiscal consolidation in much of Latin America, or better governance in Africa and the Middle East. Beyond this explicit identification of strengths and weaknesses and the guidance this offers for policy formulation and reform, the Index also provides a useful overview of each country's individual performance with respect to that of its peers. The intent is to highlight best practices as a way of encouraging a more proactive approach to reforms, to suggest that an improved policy framework makes an enormous difference for creating the appropriate conditions for high quality growth. Second, given that many of the necessary reforms will require joint efforts by both policymakers and the business community, we aim to provide a concrete platform for dialogue among economic actors regarding the best ways forward. A dialogue involving government, business, and civil society that is illumined by the insights conferred by a broad array of relevant and timely indicators can often serve as a catalyst for the kind of reforms that will contribute to raising productivity levels in economies around the world, helping to boost living standards and the quality of life for many of the world's citizens.

Notes

- 1 De Soto (2000), Chapter 3.
- 2 Kaufmann (2005), pp.81–98.
- 3 Kaufmann (2003), p. 146.
- 4 On the role of education in the emergence of Israel as an ICT power see Lopez-Claros and Mia (2006), pp. 89–106.
- 5 See, for example Acemoglu et al. (2004).
- 6 See Easterly (2005), pp. 187–196.
- 7 For an overview, see Calderón and Servén (2004).
- 8 See, for instance, Fischer (1993); recent research (Acemoglu et al. (2003)) shows that economic policies are, at least partially, an outcome of the prevailing institutional framework.
- 9 See Lucas (1988) and Kremer (1993).
- 10 Research by Dearden et al. (2005) found that UK companies that increased their training activities by 1 percentage point gained on average 0.6 percent in industrial productivity.
- 11 See for example, Alesina et al. (2004) for an overview of the literature on the relationship between country size and economic growth.

- 12 For an overview of the theoretical and empirical research on the relationship between finance and growth, see Levine (2004).
- 13 See for example Van Reenen and Sadun (2006).
- 14 See Machin and Van Reenen (1998).
- 15 See Bloom and Van Reenen (2006).
- 16 See for example Krugman (1979), Romer (1987 and 1990), and Grossman and Helpman (1991).
- 17 See Trajtenberg (2005).
- 18 For all the talk about support to agriculture in the United States and the EU and the distortions these create for global trade and international prices, Switzerland is actually a worse offender.
- 19 World Bank, *World Development Indicators* (2005a).
- 20 Ibid.

References

- Acemoglu, D., S. Johnson, J. Robinson, and Y. Thaicharoen. 2003. "Institutional Causes, Macroeconomic Symptoms: volatility, Crises, and Growth." *Journal of Monetary Economics* 50: 49–123.
- Acemoglu, D., S. Johnson, and J. Robinson. 2004. "Institutions as the Fundamental Cause of Long-Run Growth." P. Aghion and S. Durlauf, eds. *Handbook of Economic Growth*. Elsevier.
- Aghion, P., N. Bloom, R. Blundell, R. and P. Howitt. 2004. "Competition and Innovation: An Inverted U Relationship." AIM Working Paper Series WP-007. September.
- Aghion, P. and P. Howitt. 1998. "Market Structure Growth Process." *Review of Economic Dynamics* 1: 276–305.
- Aguilar de Medeiros, C. 2002. "Economic Growth, Poverty and Income Distribution in Brazil." Available at: http://www.networkideas.org/featart/jan2002/print/print280102_Brazil.htm
- Alesina, A., E. Spolaore, and R. Wacziarg. 2004. "Trade, Growth, and the Size of Countries." P. Aghion and S. Durlauf, eds. *Handbook of Economic Growth*. Elsevier.
- Aschauer, D. 1989. "Is Public Expenditure Productive?" *Journal of Monetary Economics* 23:177–200.
- Bank of Israel. 2005. *Annual Report*. Available at: http://www.bankisrael.gov.il/deptdata/mehkar/doch05/eng/pe_1.pdf
- BBC News. 2006. Country Profile: Turkey. Available at: <http://newsvote.bbc.co.uk>
- Bloom, N. and J. Van Reenen. 2006. "Measuring and Explaining Management Practices Across Firms and Countries." Discussion Paper No. 716. London: Centre for Economic Performance. March.
- Borensztein, E., J. De Gregorio, and J-W. Lee. 1998. "How does Foreign Direct Investment Affect Economic Growth?" *Journal of International Economics* 45:115–35.
- BusinessWeek*. 2005. 30 December.
- Calderón, C. and L. Servén, 2004. "The Effects of Infrastructure Development on Growth and Income Distribution." World Bank Policy Research Paper, WPS 3400. Washington, DC World Bank.
- Capp, J., H.-P. Elstrodt, and W. B. Jones, Jr. 2005. "Reining in Brazil's Informal Economy." *The McKinsey Quarterly*. January. Available at: <http://www.mckinseyquarterly.com>
- Citrin, D. and A. Wolfson. 2006. "Japan's BACK!" *Finance and Development* 43(2). Available at: www.imf.org
- Commission on Macroeconomics and Health. 2001. *Macroeconomics and Health: Investing in Health for Economic Development*. Geneva.
- Condon, C. 2006. "Hungarian PM to Promise Ambitious Reforms and Budget Cuts." *Financial Times*. 30 May.
- Dahl, A. and A. Lopez-Claros. 2006. "The Impact of Information and Communication Technology on the Economic Competitiveness and Social Development of Taiwan." *Global Information Technology Report 2005–2006*. Hampshire: Palgrave Macmillan. 107–18.
- Dearden, L., H. Reed, and J. Van Reenen. 2005. "The Impact of Training on Productivity and Wages: Evidence from British Panel Data." Institute for Fiscal Studies Working Paper 05/16. London.
- Delegation of the European Commission in Turkey. 2006. Historical Review. Available at: <http://www.deltur.cec.eu.int>
- Department for International Development (DFID). 2006a. Country Profile: Brazil. Available at: <http://www.dfid.gov.uk/countries/caribbean/brazil.asp>
- . 2006b. The Development Challenge for Brazil. Available at: <http://www.dfid.gov.uk>
- Dervis, K., M. Emerson, D. Gros, and S. Ulgen. 2004. *The European Transformation of Modern Turkey*. Brussels: Centre for European Policy Studies.
- De Soto, H. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Deutsche Bank Research. 2006. Brazil: O Pais do Futuro. 30 May.
- Dincer Bacer, D., D. Farrell, and D.E. Meen. 2003. "Turkey's Quest for Stable Growth." *The McKinsey Quarterly*. Special Edition: Global Direction. Available at: <http://www.mckinseyquarterly.com>
- Easterly, W. 2002. *The Elusive Quest for Growth*. Cambridge, MA: MIT Press
- . 2005. "National Policies and Economic Growth: A Reappraisal." *Handbook of Economic Growth*, ed. By Philippe Aghion and Steven Durlauf. Elsevier.
- The Economist*. 2005a. "Too Big to Handle?" 23 June.
- . 2005b. "The Sun Also Rises." 6 October.
- . 2006a. "Coming Apart?" 4 May.
- . 2006b. "The Viagra of Volatility." 25 May.
- . 2006c. "A Turkish Bath." 1 June.
- . 2006d. Forecast. Available at: <http://www.economist.com/countries/Turkey>
- . 2006e. Factsheet. Available at: <http://www.economist.com/countries/Turkey>
- . 2006f. "What Brazil's Scandal-Tarnished President Should Do with a Second Chance." 2 March.
- Elstrodt, H.-P., J. A. Fergie, and M. A. Laboissière. 2006. "How Brazil Can Grow." *The McKinsey Quarterly*. No. 2. Available at: <http://www.mckinseyquarterly.com>
- European Commission. 2005a. Progress Report 2005. Bruxelles
- . 2006a. EU-Turkey Relations. Bruxelles. Available at: <http://ec.europa.eu>
- . 2006b. Economic Profile. Bruxelles. Available at: <http://ec.europa.eu>
- . 2006c. Political Profile. Bruxelles. Available at: <http://ec.europa.eu>
- . 2006d. Key Events in Turkey-EU Relations. Bruxelles. Available at: <http://ec.europa.eu>
- Farrell, D. and E. Greenberg. 2005. "The Economic Impact of an Ageing Japan." *The McKinsey Quarterly*. May. Available at: www.mckinseyquarterly.com
- Financial Times*. 2006. Special Report on Turkey. 26 June.
- Fischer, S. 1993. "The Role of Macroeconomic Factors in Growth." *Journal of Monetary Economics* 32(3): 1176–96.
- Gonçalves, R. 2005. A Macroeconomia de Lula. Available at: <http://www.corecon-rj.org.br>

- Government of Israel. 2006. Budget Policy for 2006. Ministry of Finance. Available at: http://www.mof.gov.il/bud06_ea/2006B1.pdf
- Grossman, G. and E. Helpman. 1991. *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press.
- Hemmings, P. 2005. "Hungarian Innovation Policy: What's the Best Way Forward?" Economics Department Working Paper No. 445. Geneva: OECD.
- International Labor Organization (ILO). 2005. *Key Labor Market Indicators Series*. 4th ed. Geneva.
- International Monetary Fund (IMF). 2005a. Hungary – 2005 Staff Visit Concluding Statement of the IMF Mission. 21 September 21. Available at: www.imf.org
- . 2005b. IMF Executive Board Concludes 2005 Article IV Consultation with Hungary. 29 June. Available at: www.imf.org
- . 2005c. Staff Report for the 2005 Article IV Consultation with Argentina. 31 May.
- . 2006. *World Economic Outlook 2006*. Washington, DC: IMF. Available at: <http://www.imf.org/external/pubs/ft/weo/2006/01/pdf/weo0406.pdf>
- Kaminski, B. and F. Ng. 2006. "Turkey Evolving Trade Integration into Pan-European Markets." World Bank Policy Research Working Paper 3908. Washington, DC: World Bank.
- Kaufmann, D. 2003. Governance Redux: the Empirical Challenge." *The Global Competitiveness Report 2003–2004*. Hampshire: Palgrave Macmillan. 137–64.
- . 2005. "Myths and Realities of Governance and Corruption." *The Global Competitiveness Report 2005–2006*. Hampshire: Palgrave Macmillan. 81–98.
- Kondo, M., J. W. Lewis, V. Palmade, and Y. Yokoyama. 2000. "Reviving Japan's Economy." *The McKinsey Quarterly*. Special Edition: Asia Revalued. Available at: www.mckinseyquarterly.com
- Kremer, M. 1993. "The O-Ring Theory of Economic Development." *Quarterly Journal of Economics* 108(3): 551–75.
- Krugman, P. 1979. "A Model of Innovation, Technological Transfer and the World Distribution of Income." *Journal of Political Economy* 87(2): 253–66.
- Latin Business Chronicle*. 2005. "2005 GDP Forecast: Brazil Top Economy." Special Report. May. Available at: <http://www.Latinbusinesschronicle.com/reports/reports/gdp05.htm>
- . 2006a. "Brazil and Mexico: Strong FDI Growth." Special Report. February. Available at: <http://www.Latinbusinesschronicle.com/reports/reports/0206/fdi.htm>
- . 2006b. "GDP Growth: Argentina Best." Special Report. April 24th. Available at: <http://www.Latinbusinesschronicle.com/reports/reports/042406/gdp.htm>
- Levine, R. 2004. "Finance and Growth. Theory and Evidence." P. Aghion and S. Durlauf, eds. *Handbook of Economic Growth*. Elsevier.
- Lopez-Claros, A., J. Blanke, M. Drzeniek, I. Mia, and S. Zahidi. 2005. "Policies and Institutions Underpinning Economic Growth: Results from the Competitiveness Indexes." *The Global Competitiveness Report 2005–2006*. Hampshire: Palgrave Macmillan. 3–37.
- Lopez-Claros, A. and I. Mia. 2006. "Israel: Factors in the Emergence of an ICT Powerhouse." *The Global Information Technology Report 2005–2006*. Hampshire: Palgrave Macmillan. 89–105.
- Loyola, G. 2006. "Receita para crescer: educação e aumento do investimento privado." February. Available at: <http://www.corecon-rj.org.br>
- Lukas, R. Jr. 1988. "On the Mechanics of Economic Development." *Journal of Monetary Economics* 21: 3–42.
- Machin, S. and J. Van Reenen. 1998. "Technology and Changes in Skill Structure: Evidence from Seven OECD Countries." *Quarterly Journal of Economics* 113: 195–226.
- Mendes Gandra, R. 2005. As causas da desigualdade de renda no Brasil. October. Available at: <http://www.corecon-rj.org.br>
- Napier, G., S. Schwaag Serger, and E. Wise Hansson. 2004. Strengthening Innovation and Technology Policies for SME Development in Turkey. Malmö: IKED.
- Oliveira Martins, J., F. Gonand, P. Antolin, C. de la Maisonneuve, and Kwang-Yeol Yoo. 2005. "The Impact of Ageing on Demand, Factor Markets and Growth." Working Paper No. 7/2005. Paris: OECD.
- Organisation for Economic Co-operation and Development (OECD). 2005a. "Economic Survey of Hungary." Policy Brief. *OECD Observer*. July. Available at: www.oecd.org
- . 2005b. "Economic Survey of Japan." Policy Brief. *OECD Observer*. January. Available at: www.oecd.org
- Pardini Bicudo Vêras, M. 2003. "Brazilian Inequalities: Poverty, Social Inclusion and Exclusion in Sao Paulo." Paper presented at the Colloquy Hexapolis IV. Providence, Rhode Island.
- Pritchett, L. 1996. "Where Has All the Education Gone?" Policy Research Working Paper No. 1581. Washington, DC: World Bank. March.
- Romer, P. 1987. "Growth Based on Increasing Returns Due to Specialization." *American Economic Review* 77(2): 56–62.
- . 1991. "Endogenous Economic Change." *Journal of Political Economy* 99(5): 71–102.
- Sala-i-Martin, X. and E. V. Artadi. 2004. "The Global Competitiveness Index." *The Global Competitiveness Report 2004–2005*. Hampshire: Palgrave Macmillan. 51–80.
- Sen, A. 1999. *Development as Freedom*. New York: Knopf.
- Sicsu, J., J. L. Oreiro, and L. F. De Paula. 2004. Um novo modelo econômico para o Brasil. January. Available at: <http://www.corecon-rj.org.br>
- Singh, A., A. Belaisch, C. Collyns, P. de Masi, R. Krieger, G. Meredith, and R. Rennhack. 2005. Stabilization and Reform in Latin America: A Macroeconomic Perspective on the Experience Since the Early 1990s." Occasional Paper 238. Washington, DC: IMF.
- Government of South Africa. Department of Trade and Industry. 2003. *South Africa's Economic Transformation: A Strategy for Broad-Based Black Economic Empowerment (BEE)*. Pretoria.
- Statistics South Africa. 2004. Labor Force Survey. Pretoria. March.
- . 2005. Statistical release P0210: Labor Force Survey. Pretoria. September. Available at: <http://www.statssa.gov.za/publications/P0210/P0210September2005.pdf>
- Trajtenberg, M. 2005. "Innovation Policy for Development: an Overview." Paper prepared for LAEBA, Second Annual Meeting. Tel Aviv University. NBER and CEPR. November.
- UNCTAD. 2005. World Investment Report 2005. Transnational corporations and the Internationalization of R&D, Geneva.
- United Nations Development Programme (UNDP). 2003. *Human Development Report*. New York: United Nations.
- . 2005. *Human Development Report*. New York: United Nations.
- Van Reenen, J. and R. Sadun. 2006. "Information Technology and Productivity, or "It Ain't What You Do, It's the Way that You Do I.T." *Global Information Technology Report 2005–2006*. Hampshire: Palgrave Macmillan. 55–60.
- World Bank. Various years. *Doing Business Report*. Washington, DC: World Bank.
- . 2005a. *World Development Indicators*.
- . 2005b. *Doing Business in Japan*. Available at: www.doingbusiness.org
- World Health Organization (WHO). 2001. Commission for Macroeconomics and Health. Geneva.
- . 2006. *Doing Business in Brazil*. Available at: www.doingbusiness.org

Yilmaz, B. 2003. "Turkey's Competitiveness in the European Union: A Comparison with Five Candidate Countries: Bulgaria, the Czech Republic, Hungary, Poland, Romania, and the EU15." Ezoneplus Working Paper No.12. Berlin: Jean Monet Centre of Excellence.

Appendix A: Composition of the Global Competitiveness Index

This appendix provides details on how the Global Competitiveness Index is constructed. All of the Survey and hard data variables used in this index can be found in the data tables section of this *Report* with more detailed descriptions.

1st Pillar: Institutions

A. Public institutions

1. Property rights
 - 1.01 Property rights
2. Ethics and corruption
 - 1.02 Diversion of public funds
 - 1.03 Public trust of politicians
3. Undue influence
 - 1.04 Judicial independence
 - 1.05 Favoritism in decisions of government officials
4. Government inefficiency (red tape, bureaucracy and waste)
 - 1.06 Wastefulness of government spending
 - 1.07 Burden of government regulation
5. Security
 - 1.08 Business costs of terrorism
 - 1.09 Reliability of police services
 - 1.10 Business costs of crime and violence
 - 1.11 Organized crime

B. Private institutions

1. Corporate ethics
 - 1.12 Ethical behavior of firms
2. Accountability
 - 1.13 Efficacy of corporate boards
 - 1.14 Protection of minority shareholders' interests
 - 1.15 Strength of auditing and accounting standards

2nd Pillar: Infrastructure

- 2.01 Overall infrastructure quality
- 2.02 Railroad infrastructure development
- 2.03 Quality of port infrastructure
- 2.04 Quality of air transport infrastructure
- 2.05 Quality of electricity supply
- 2.06 Telephone lines (hard data)

3rd Pillar: Macroeconomy

- 3.01 Government surplus/deficit (hard data)
- 3.02 National savings rate (hard data)
- 3.03 Inflation (hard data)
- 3.04 Interest rate spread (hard data)
- 3.05 Government debt (hard data)
- 3.06 Real effective exchange rate (hard data)

4th Pillar: Health and primary education

A. Health

- 4.01 Medium-term business impact of malaria
- 4.02 Medium-term business impact of tuberculosis
- 4.03 Medium-term business impact of HIV/AIDS
- 4.04 Infant mortality (hard data)
- 4.05 Life expectancy (hard data)
- 4.06 Tuberculosis prevalence (hard data)
- 4.07 Malaria prevalence (hard data)
- 4.08 HIV prevalence (hard data)

B. Primary education

- 4.09 Primary enrolment (hard data)

5th Pillar: Higher education and training

A. Quantity of education

- 5.01 Secondary enrolment ratio (hard data)
- 5.02 Tertiary enrolment ratio (hard data)

B. Quality of education

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

C. On-the-job training

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

6th Pillar: Market efficiency

A. Good markets: Distortions, competition, and size

1. Distortions

- 6.01 Agricultural policy costs
- 6.02 Efficiency of legal framework
- 6.03 Extent and effect of taxation
- 6.04 Number of procedures required to start a business (hard data)
- 6.05 Time required to start a business (hard data)

2. Competition

- 6.06 Intensity of local competition
- 6.07 Effectiveness of antitrust policy
- 6.08 Imports (hard data)
- 6.09 Prevalence of trade barriers
- 6.10 Foreign ownership restrictions

3. Size

- 6.00 GDP – exports + imports (hard data)
- 6.11 Exports (hard data)

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

B. Labor markets: Flexibility and efficiency

1. Flexibility

- 6.12 Hiring and firing practices
- 6.13 Flexibility of wage determination
- 6.14 Cooperation in labor-employer relations

2. Efficiency

- 6.15 Reliance on professional management
- 6.16 Pay and productivity
- 6.17 Brain drain
- 6.18 Private sector employment of women

C. Financial markets: Sophistication and openness

- 6.19 Financial market sophistication
- 6.20 Ease of access to loans
- 6.21 Venture capital availability
- 6.22 Soundness of banks
- 6.23 Local equity market access

7th Pillar: Technological readiness

- 7.01 Technological readiness
- 7.02 Firm-level technology absorption
- 7.03 Laws relating to ICT
- 7.04 FDI and technology transfer
- 7.05 Cellular telephones (hard data)
- 7.06 Internet users (hard data)
- 7.07 Personal computers (hard data)

8th Pillar: Business sophistication

A. Networks and supporting industries

- 8.01 Local supplier quantity
- 8.02 Local supplier quality

B. Sophistication of firms' operations and strategy

- 8.03 Production process sophistication
- 8.04 Extent of marketing
- 8.05 Control of international distribution
- 8.06 Willingness to delegate authority
- 8.07 Nature of competitive advantage
- 8.08 Value-chain presence

9th Pillar: Innovation

- 9.01 Quality of scientific research institutions
- 9.02 Company spending on research and development
- 9.03 University/industry research collaboration
- 9.04 Government procurement of advanced technology products
- 9.05 Availability of scientists and engineers
- 9.06 Utility patents (hard data)
- 9.07 Intellectual property protection
- 9.08 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 preva-

lence 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 $GDP + M - X$.